```
=> b reg
FILE 'REGISTRY' ENTERED AT 11:58:55 ON 16 NOV 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   15 NOV 2005  HIGHEST RN 868125-94-4
DICTIONARY FILE UPDATES:  15 NOV 2005  HIGHEST RN 868125-94-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

**********************************************************************
*                                                                    *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,    *
* effective March 20, 2005.  A new display format, IDERL, is now     *
* available and contains the CA role and document type information. *
*                                                                    *
**********************************************************************

Structure search iteration limits have been increased.  See HELP SLIMITS
for details.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> d que sta l30
L16             STR
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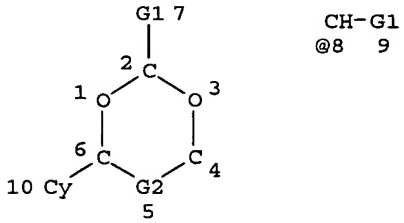


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VAR G1=AK/CY
VAR G2=CH2/8
NODE ATTRIBUTES:
CONNECT IS M3  RC AT   4
DEFAULT MLEVEL IS ATOM
GGCAT   IS UNS  AT  10
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  10

STEREO ATTRIBUTES: NONE
L18         567 SEA FILE=REGISTRY SSS FUL L16
L19             STR
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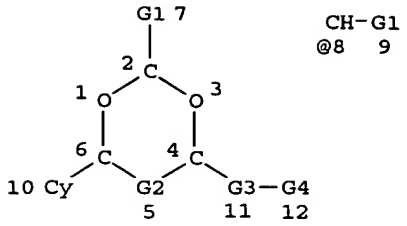
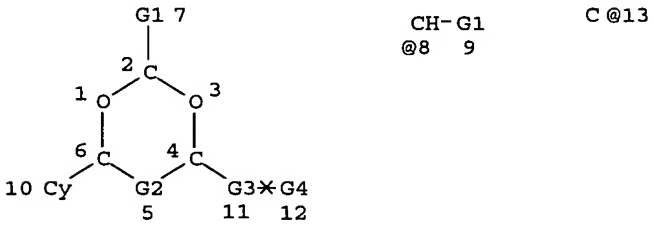


VAR G1=AK/CY
VAR G2=CH2/8
REP G3=(1-5) C
VAR G4=O/S
NODE ATTRIBUTES:
CONNECT IS M3 RC AT 4
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 10
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
L21 82 SEA FILE=REGISTRY SUB=L18 SSS FUL L19
L26 STR



VAR G1=AK/CY
VAR G2=CH2/8
REP G3=(1-3) 13
VAR G4=N/C
NODE ATTRIBUTES:
NSPEC IS RC AT 13
CONNECT IS M3 RC AT 4
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 10
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 13

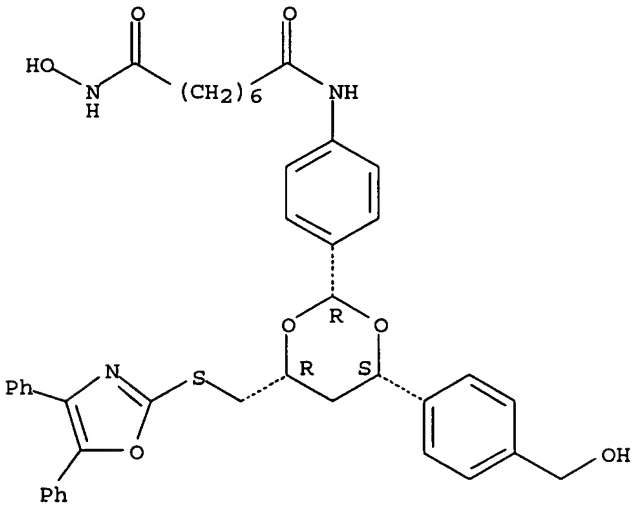
STEREO ATTRIBUTES: NONE
L27 9 SEA FILE=REGISTRY SUB=L18 SSS SAM L26
L28 88 SEA FILE=REGISTRY ABB=ON PLU=ON (L21 OR L27)
L30 79 SEA FILE=REGISTRY ABB=ON PLU=ON L28 NOT CCS/CI

=> d ide can l23

L23 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN
RN 537049-40-4 REGISTRY
ED Entered STN: 25 Jun 2003
CN Octanediamide, N-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-

6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N'-hydroxy-, rel-
(9CI) (CA INDEX NAME)
OTHER NAMES:
CN Tubacin
FS STEREOSEARCH
MF C41 H43 N3 O7 S
SR CA
LC STN Files: BIOSIS, CA, CAPLUS, TOXCENTER, USPATFULL

Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

8 REFERENCES IN FILE CA (1907 TO DATE)
8 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:241989

REFERENCE 2: 143:109212

REFERENCE 3: 142:475590

REFERENCE 4: 142:235358

REFERENCE 5: 140:339332

REFERENCE 6: 140:124434

REFERENCE 7: 139:94978

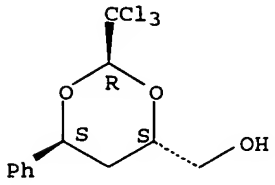
REFERENCE 8: 139:17111

=> d ide can 145 tot

L45 ANSWER 1 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 385372-89-4 REGISTRY
ED Entered STN: 22 Jan 2002
CN 1,3-Dioxane-4-methanol, 6-phenyl-2-(trichloromethyl)-, (2R,4S,6S)-rel-
(9CI) (CA INDEX NAME)
FS STEREOSEARCH

MF C12 H13 Cl3 O3
SR CA
LC STN Files: CA, CAPLUS

Relative stereochemistry.



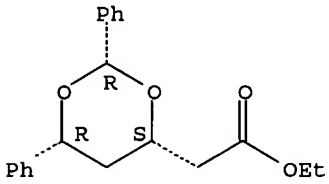
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:69857

L45 ANSWER 2 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 337508-83-5 REGISTRY
ED Entered STN: 23 May 2001
CN 1,3-Dioxane-4-acetic acid, 2,6-diphenyl-, ethyl ester, (2R,4S,6R)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C20 H22 O4
SR CA
LC STN Files: CA, CAPLUS, CASREACT

Absolute stereochemistry. Rotation (+).



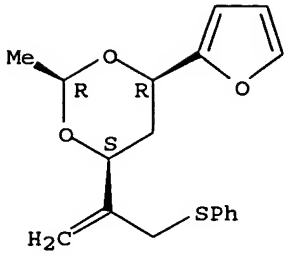
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 134:340467

L45 ANSWER 3 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 159558-15-3 REGISTRY
ED Entered STN: 14 Dec 1994
CN 1,3-Dioxane, 4-(2-furanyl)-2-methyl-6-[1-[(phenylthio)methyl]ethenyl]-, (2α,4α,6α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C18 H20 O3 S
SR CA
LC STN Files: CA, CAPLUS, CASREACT

Relative stereochemistry.



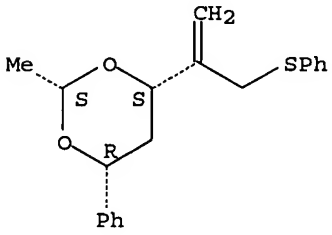
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 122:30928

L45 ANSWER 4 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 159558-14-2 REGISTRY
ED Entered STN: 14 Dec 1994
CN 1,3-Dioxane, 2-methyl-4-phenyl-6-[1-[(phenylthio)methyl]ethenyl]-, (2α,4α,6α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C20 H22 O2 S
SR CA
LC STN Files: CA, CAPLUS, CASREACT

Relative stereochemistry.



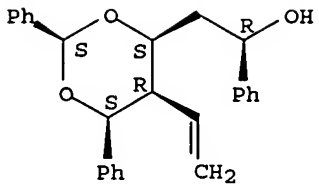
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 122:30928

L45 ANSWER 5 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 131349-73-0 REGISTRY
ED Entered STN: 11 Jan 1991
CN 1,3-Dioxane-4-ethanol, 5-ethenyl-α,2,6-triphenyl-, [2α,4α(S*),5α,6α]- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C26 H26 O3
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

Relative stereochemistry.



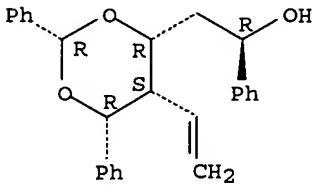
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 114:207415

L45 ANSWER 6 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 131139-31-6 REGISTRY
ED Entered STN: 21 Dec 1990
CN 1,3-Dioxane-4-ethanol, 5-ethenyl-α,2,6-triphenyl-,
[2α,4α(R*),5α,6α]- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C26 H26 O3
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT
(*File contains numerically searchable property data)

Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

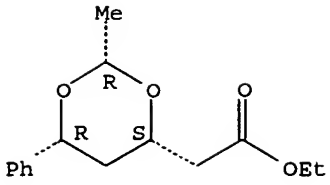
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 114:185675

REFERENCE 2: 114:24103

L45 ANSWER 7 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 130822-20-7 REGISTRY
ED Entered STN: 07 Dec 1990
CN 1,3-Dioxane-4-acetic acid, 2-methyl-6-phenyl-, ethyl ester,
(2α,4α,6α)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 1,3-Dioxane-4-acetic acid, 2-methyl-6-phenyl-, ethyl ester,
(2α,4α,6α)-(±)-
FS STEREOSEARCH
MF C15 H20 O4
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

Relative stereochemistry.



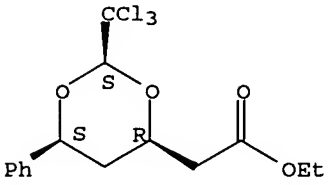
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 114:6220

L45 ANSWER 8 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **128316-91-6** REGISTRY
ED Entered STN: 20 Jul 1990
CN 1,3-Dioxane-4-acetic acid, 6-phenyl-2-(trichloromethyl)-, ethyl ester, (2α,4α,6α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
DR 130979-26-9
MF C15 H17 Cl3 O4
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

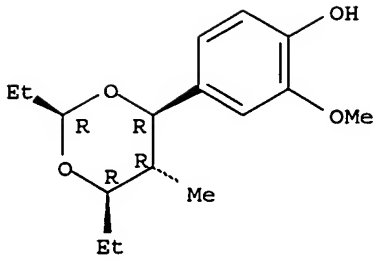
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 114:6220

REFERENCE 2: 113:59054

L45 ANSWER 9 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **104789-94-8** REGISTRY
ED Entered STN: 18 Oct 1986
CN Phenol, 4-(2,6-diethyl-5-methyl-1,3-dioxan-4-yl)-2-methoxy-, (2α,4α,5β,6α)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C16 H24 O4
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT
(*File contains numerically searchable property data)

Relative stereochemistry.

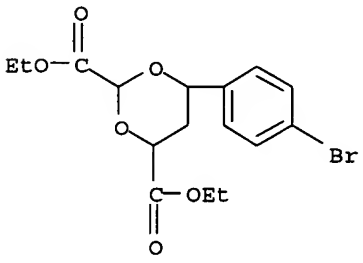


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 105:191018

L45 ANSWER 10 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 13984-81-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN m-Dioxane-2,4-dicarboxylic acid, 6-(p-bromophenyl)-, diethyl ester (8CI)
(CA INDEX NAME)
FS 3D CONCORD
MF C16 H19 Br O6
LC STN Files: CA, CAPLUS

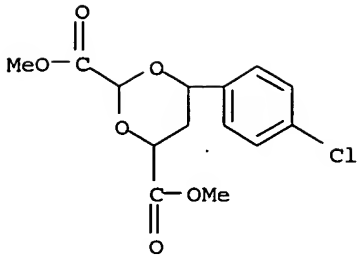


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 66:115660

L45 ANSWER 11 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 13984-80-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN m-Dioxane-2,4-dicarboxylic acid, 6-(p-chlorophenyl)-, dimethyl ester (8CI)
(CA INDEX NAME)
FS 3D CONCORD
MF C14 H15 Cl O6
LC STN Files: CA, CAPLUS



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 66:115660

=> b hcap
FILE 'HCAPLUS' ENTERED AT 11:59:44 ON 16 NOV 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 16 Nov 2005 VOL 143 ISS 21
FILE LAST UPDATED: 15 Nov 2005 (20051115/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all
YOU HAVE REQUESTED DATA FROM FILE 'USPATFULL' - CONTINUE? (Y)/N:n

=> d all l38 fhitstr tot

L38 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:554344 HCAPLUS
DN 143:109212
ED Entered STN: 27 Jun 2005
TI Small-molecule inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma
AU Hideshima, Teru; Bradner, James E.; Wong, Jason; Chauhan, Dharminder; Richardson, Paul; **Schreiber, Stuart L.**; Anderson, Kenneth C.
CS Jerome Lipper Multiple Myeloma Center, Department of Medical Oncology, Dana-Farber Cancer Institute, **Harvard** Medical School, Boston, MA, 02115, USA
SO Proceedings of the National Academy of Sciences of the United States of America (2005), 102(24), 8567-8572

CODEN: PNASA6; ISSN: 0027-8424
PB National Academy of Sciences
DT Journal
LA English
CC 1-6 (Pharmacology)
AB The authors have shown that the proteasome inhibitor bortezomib (formerly known as PS-341) triggers significant antitumor activity in multiple myeloma (MM) in both preclin. models and patients with relapsed refractory disease. Recent studies have shown that unfolded and misfolded ubiquitinated proteins are degraded not only by proteasomes, but also by aggresomes, dependent on histone deacetylase 6 (HDAC6) activity. The authors therefore hypothesized that inhibition of both mechanisms of protein catabolism could induce accumulation of ubiquitinated proteins followed by significant cell stress and cytotoxicity in MM cells. To prove this hypothesis, the authors used bortezomib and tubacin to inhibit the proteasome and HDAC6, resp. Tubacin specifically triggers acetylation of α-tubulin as a result of HDAC6 inhibition in a dose- and time-dependent fashion. It induces cytotoxicity in MM cells at 72 h with an IC50 of 5-20 μM, which is mediated by caspase-dependent apoptosis; no toxicity is observed in normal peripheral blood mononuclear cells. Tubacin inhibits the interaction of HDAC6 with dynein and induces marked accumulation of ubiquitinated proteins. It synergistically augments bortezomib-induced cytotoxicity by c-Jun N-terminal kinase/caspase activation. Importantly, this combination also induces significant cytotoxicity in plasma cells isolated from MM patient bone marrow. Finally, adherence of MM cells to bone marrow stromal cells confers growth and resistance to conventional treatments; in contrast, the combination of tubacin and bortezomib triggers toxicity even in adherent MM cells. Our studies therefore demonstrate that tubacin combined with bortezomib mediates significant anti-MM activity, providing the framework for clin. evaluation of combined therapy to improve patient outcome in MM.
ST bortezomib tubacin antitumor multiple myeloma
IT Drug resistance
(antitumor; small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)
IT Antitumor agents
(resistance to; small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)
IT Adhesion, biological
Antitumor agents
Combination chemotherapy
Human
Multiple myeloma
(small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)
IT Dyneins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)
IT Drug interactions
(synergistic; small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)
IT Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(ubiquitinated; small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)
IT 9076-57-7, Histone deacetylase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(6; small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)
IT 9055-67-8, Poly(ADP-ribose) polymerase 155215-87-5, JNK kinase 169592-56-7, Caspase-3 179241-78-2, Caspase 8 180189-96-2, Caspase 9
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)
IT 179324-69-7, Bortezomib 537049-40-4, Tubacin

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

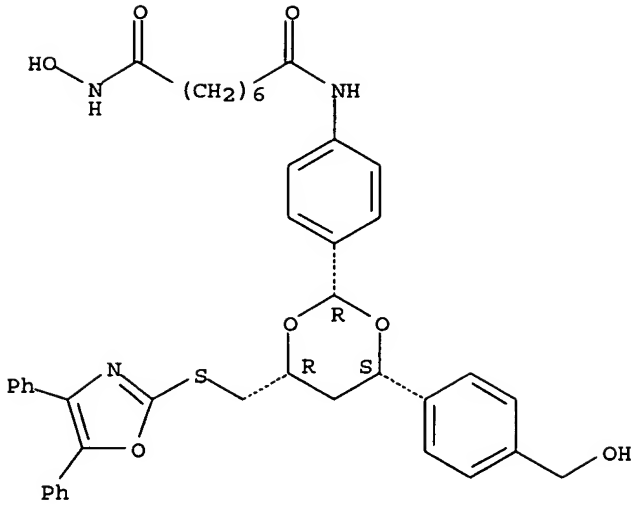
(1) Attal, M; N Engl J Med 2003, V349, P2495 HCAPLUS
(2) Bennett, E; Mol Cell 2005, V17, P351 HCAPLUS
(3) Catley, L; Blood 2003, V102, P2615 HCAPLUS
(4) Chauhan, D; Cancer Res 2003, V63, P6174 HCAPLUS
(5) Garcia-Mata, R; Traffic 2002, V3, P388 HCAPLUS
(6) Gregory, W; J Clin Oncol 1992, V10, P334 MEDLINE
(7) Haggarty, S; Chem Biol 2003, V10, P383 HCAPLUS
(8) Haggarty, S; Proc Natl Acad Sci USA 2003, V100, P4389 HCAPLUS
(9) Hideshima, T; Blood 2003, V101, P1530 HCAPLUS
(10) Hideshima, T; Cancer Res 2001, V61, P3071 HCAPLUS
(11) Hideshima, T; Cancer Res 2003, V63, P8428 HCAPLUS
(12) Hideshima, T; Immunol Rev 2003, V194, P164 HCAPLUS
(13) Hideshima, T; J Biol Chem 2002, V277, P16639 HCAPLUS
(14) Hideshima, T; Nat Rev Cancer 2002, V2, P927 HCAPLUS
(15) Hideshima, T; Oncogene 2001, V20, P4519 HCAPLUS
(16) Hideshima, T; Oncogene 2003, V22, P8386 HCAPLUS
(17) Hideshima, T; Oncogene 2004, V23, P8766 HCAPLUS
(18) Kawaguchi, Y; Cell 2003, V115, P727 HCAPLUS
(19) Kopito, R; Trends Cell Biol 2000, V10, P524 HCAPLUS
(20) Le Gouill, S; Blood 2004, V104, P2886 HCAPLUS
(21) Marks, P; Curr Opin Pharmacol 2003, V3, P344 HCAPLUS
(22) Mitsiades, C; Cancer Cell 2004, V5, P221 HCAPLUS
(23) Mitsiades, N; Blood 2003, V101, P2377 HCAPLUS
(24) Mitsiades, N; Blood 2003, V101, P4055 HCAPLUS
(25) Mitsiades, N; Proc Natl Acad Sci USA 2002, V99, P14374 HCAPLUS
(26) Raje, N; Blood 2004, V104, P4188 HCAPLUS
(27) Richardson, P; N Engl J Med 2003, V348, P2609 HCAPLUS
(28) Uchiyama, H; Blood 1993, V82, P3712 HCAPLUS
(29) Wong, J; J Am Chem Soc 2003, V125, P5586 HCAPLUS

IT **537049-40-4**, Tubacin
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(small-mol. inhibition of proteasome and aggresome function induces synergistic antitumor activity in multiple myeloma)

RN 537049-40-4 HCAPLUS

CN Octanediamide, N-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N'-hydroxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:497346 HCAPLUS
DN 143:19947
ED Entered STN: 10 Jun 2005
TI Human papillomavirus inhibitors and screening system reagentss
IN Meneses, Patricio I.; Koehler, Angela N.; Wong, Jason C.; Howley, Peter M.; **Schreiber, Stuart L.**
PA President and Fellows of **Harvard** College, USA
SO U.S. Pat. Appl. Publ., 23 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C12Q001-70
ICS A61K031-41; C07K007-08
INCL 435005000; 530326000; 514381000
CC 1-5 (Pharmacology)
Section cross-reference(s): 10, 28, 63
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005123902	A1	20050609	US 2004-851407	20040521
PRAI US 2003-472261P	P	20030521		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2005123902	ICM	C12Q001-70
	ICS	A61K031-41; C07K007-08
	INCL	435005000; 530326000; 514381000
US 2005123902	NCL	435/005.000
	ECLA	A61K031/41

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The present invention provides systems for identifying anti-viral agents. In particular, the invention encompasses reagents and strategies for identifying agents that inhibit or disrupt key protein-protein interactions that are important in the life cycle of papillomaviruses. The invention allows identification, production, and/or use of agents that

reduce or inhibit the replication of HPV by inhibiting (e.g., precluding, reversing, or disrupting) the formation of the E1-E2 protein-protein complex. The invention also provides specific inhibitory agents, pharmaceutical compns., and methods of using these inhibitors and pharmaceutical compns. for inhibiting viral replication in vitro. Methods are also described for the treatment and prevention of HPV infections and HPV-related diseases in patients. Example 1 relates to a binding assay used to identify small mols. capable of preventing or disrupting the formation of the HPV-16 E1-E2 complex. The assay, which was carried out to screen a small mol. library of 1,3-dioxanes, led to the identification of compound 1 (I), along with nine other leads. Example 2 describes the synthesis of compds. 2 (II) and 3 (III), which are two enantiomers of a derivative of compound 1. Example 3 illustrates the determination by surface plasmon resonance of the equilibrium dissociation consts. for the binding of compound 2 and compound 3 to the HPV-16 E2 protein. Example 4 describes biol. assays that can be used to demonstrate the disruption of the E1-E2 protein-protein binding induced by compds. 2 and 3 in vitro.

ST papillomavirus inhibitor screening E1 E2 complex disruption; HPV16 E1 E2 complex inhibitor dioxane compd; surface plasmon resonance screening HPV inhibitor

IT Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(E1, association with E2, disruption or prevention of; human papillomavirus inhibitors and screening system reagents)

IT Drug targets
(E1-E2 complex; human papillomavirus inhibitors and screening system reagents)

IT Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(E2, association with E1, disruption or prevention of; human papillomavirus inhibitors and screening system reagents)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(E2, fusion protein with GST, complexes with anti-GST flow cells, small mol. binding to; human papillomavirus inhibitors and screening system reagents)

IT Immobilization, molecular or cellular
(antibody; human papillomavirus inhibitors and screening system reagents)

IT Fluorescent substances
(as labels in screening system; human papillomavirus inhibitors and screening system reagents)

IT Disease, animal
(associated with viral infection, treatment of; human papillomavirus inhibitors and screening system reagents)

IT Uterus, disease
(cervix, dysplasia, treatment of, as disease associated with HPV-16; human papillomavirus inhibitors and screening system reagents)

IT Uterus, neoplasm
(cervix, treatment of, as disease associated with HPV-16; human papillomavirus inhibitors and screening system reagents)

IT Antiviral agents
Drug delivery systems
Drug screening
Fluorometry
Human
Human papillomavirus
Human papillomavirus 16
Human papillomavirus 18
Human papillomavirus 31
Human papillomavirus 33
Papillomavirus
Prophylaxis
Surface plasmon resonance

(human papillomavirus inhibitors and screening system reagents)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(immobilized, to GST, on CM5 sensor chip; human papillomavirus inhibitors and screening system reagents)

IT Biosensors
(immunol., optical, surface plasmon-based; human papillomavirus inhibitors and screening system reagents)

IT Peptides, biological studies
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); CUS (Combinatorial use); ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); USES (Uses)
(in screening system; human papillomavirus inhibitors and screening system reagents)

IT Virus replication
(inhibition of; human papillomavirus inhibitors and screening system reagents)

IT Molecular association
(protein-protein interaction, E1-E2; human papillomavirus inhibitors and screening system reagents)

IT Chemical library
(screening of; human papillomavirus inhibitors and screening system reagents)

IT Molecules
(small, library, screening of; human papillomavirus inhibitors and screening system reagents)

IT Infection
(viral, treatment and prevention of; human papillomavirus inhibitors and screening system reagents)

IT **852992-28-0**
RL: BSU (Biological study, unclassified); CST (Combinatorial study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); CMBI (Combinatorial study); USES (Uses)
(as antiviral agent inhibiting papillomavirus replication; human papillomavirus inhibitors and screening system reagents)

IT **852992-29-1P 852992-30-4P**
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(as antiviral agent inhibiting papillomavirus replication; human papillomavirus inhibitors and screening system reagents)

IT 852992-26-8
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); CUS (Combinatorial use); PRP (Properties); ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); USES (Uses)
(as interacting peptide in screening system; human papillomavirus inhibitors and screening system reagents)

IT 146368-14-1, Cy5
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); CUS (Combinatorial use); ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); USES (Uses)
(as label in screening system; human papillomavirus inhibitors and screening system reagents)

IT 852992-27-9
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); CUS (Combinatorial use); PRP (Properties); ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); USES (Uses)
(as specificity peptide in screening system; human papillomavirus inhibitors and screening system reagents)

IT 13183-79-4, 5-Mercapto-1-methyltetrazole 475160-79-3D, resin-bound 475160-80-6D, resin-bound 475160-91-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(human papillomavirus inhibitors and screening system reagents)

IT **852992-29-1DP**, resin-bound 852992-31-5DP, resin-bound

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(human papillomavirus inhibitors and screening system reagents)

IT 50812-37-8, Glutathione S transferase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(immobilization of antibody to; human papillomavirus inhibitors and screening system reagents)

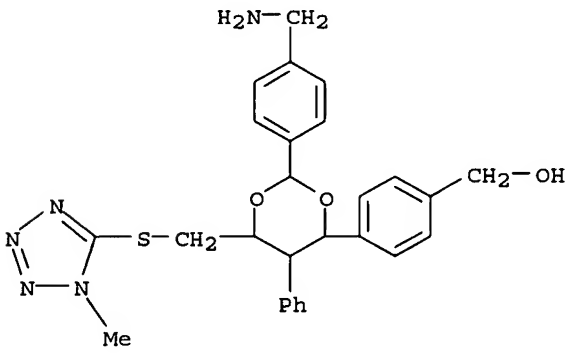
IT 505-22-6D, 1,3-Dioxane, compds.
RL: BSU (Biological study, unclassified); CST (Combinatorial study, unclassified); BIOL (Biological study); CMBI (Combinatorial study)
(screening library of; human papillomavirus inhibitors and screening system reagents)

IT 50812-37-8D, Glutathione S transferase, fusion proteins with E2 protein, complexes with anti-GST flow cells
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(small mol. binding to; human papillomavirus inhibitors and screening system reagents)

IT **852992-28-0**
RL: BSU (Biological study, unclassified); CST (Combinatorial study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); CMBI (Combinatorial study); USES (Uses)
(as antiviral agent inhibiting papillomavirus replication; human papillomavirus inhibitors and screening system reagents)

RN 852992-28-0 HCAPLUS

CN Benzenemethanol, 4-[2-[4-(aminomethyl)phenyl]-6-[[(1-methyl-1H-tetrazol-5-yl)thio]methyl]-5-phenyl-1,3-dioxan-4-yl]- (9CI) (CA INDEX NAME)



L38 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:878826 HCAPLUS

DN 142:235358

ED Entered STN: 22 Oct 2004

TI Mapping chemical space using molecular descriptors and chemical genetics: Deacetylase inhibitors

AU Haggarty, Stephen J.; Clemons, Paul A.; Wong, Jason C.; **Schreiber, Stuart L.**

CS The Eli and Edythe L. Broad Institute, Massachusetts Institute of Technology and **Harvard** University, Cambridge, MA, 02141, USA

SO Combinatorial Chemistry and High Throughput Screening (2004), 7(7), 669-676
CODEN: CCHSFU; ISSN: 1386-2073

PB Bentham Science Publishers Ltd.

DT Journal

LA English

CC 7-3 (Enzymes)

AB An objective of chemical genetics is to understand the relationships between the structures of small mols. and their phenotypic effects in intact

living systems. We present here the results of a global anal. of a mol. descriptor space constructed using structural descriptors of an aryl 1,3-dioxane-based diversity-oriented synthesis-derived library containing structural biasing elements directed at inhibiting protein deacetylases. Using principal component anal. and three-dimensional visualization, we generated metric space maps with morphol. features contributed by different diversity elements within the library. Filtering these maps using phenotypic descriptors derived from measurements of small-mol. activities in an array of cell-based assays revealed different densities of biol. activity within specific subspaces. These results provide evidence that certain structural features may be important for conferring potency and selectivity on deacetylase inhibitors with respect to tubulin and histone acetylation. Moreover, these results highlight an example of the importance of using functional measures to assess mol. diversity. Similar analyses of other chemical spaces and activity classes promise to facilitate the development of chemical genetics.

ST dioxane deriv mol descriptor protein deacetylase inhibitor

IT Combinatorial library
(aryl 1,3-dioxane-based; global anal. of mol. descriptor space constructed using structural descriptors of aryl 1,3-dioxanes as protein deacetylase inhibitors)

IT Principal component analysis
(global anal. of mol. descriptor space constructed using structural descriptors of aryl 1,3-dioxanes as protein deacetylase inhibitors)

IT Histones
Tubulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(global anal. of mol. descriptor space constructed using structural descriptors of aryl 1,3-dioxanes as protein deacetylase inhibitors)

IT Structure-activity relationship
(protein deacetylase inhibitor; global anal. of mol. descriptor space constructed using structural descriptors of aryl 1,3-dioxanes as protein deacetylase inhibitors)

IT 9076-57-7, Histone deacetylase 438496-81-2, Tubulin deacetylase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(global anal. of mol. descriptor space constructed using structural descriptors of aryl 1,3-dioxanes as protein deacetylase inhibitors)

IT **537049-40-4**, Tubacin
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(global anal. of mol. descriptor space constructed using structural descriptors of aryl 1,3-dioxanes as protein deacetylase inhibitors)

RE.CNT 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD

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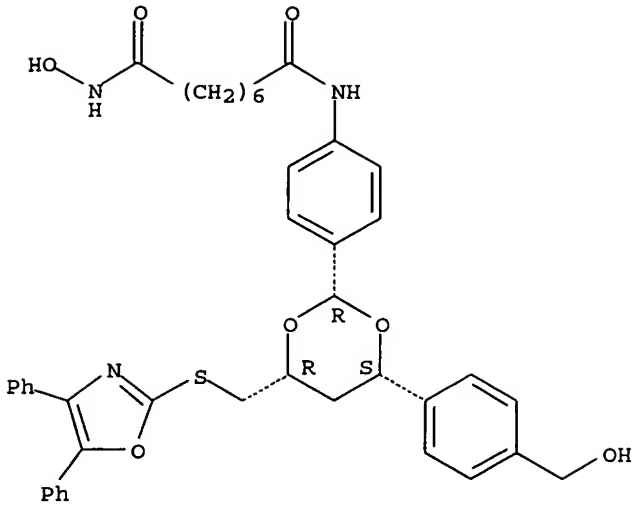
IT **537049-40-4**, Tubacin
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(global anal. of mol. descriptor space constructed using structural descriptors of aryl 1,3-dioxanes as protein deacetylase inhibitors)

RN 537049-40-4 HCAPLUS

CN Octanediamide, N-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N'-hydroxy-, rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:775495 HCAPLUS
DN 142:261482
ED Entered STN: 23 Sep 2004
TI Modular synthesis and preliminary biological evaluation of stereochemically diverse 1,3-dioxanes
AU Wong, Jason C.; **Sternson, Scott M.**; Louca, Joseph B.; Hong, Roger; **Schreiber, Stuart L.**
CS Department of Chemistry and Chemical Biology, **Harvard** University, Cambridge, MA, 02138, USA
SO Chemistry & Biology (2004), 11(9), 1279-1291
CODEN: CBOLE2; ISSN: 1074-5521
PB Cell Press
DT Journal
LA English
CC 28-11 (Heterocyclic Compounds (More Than One Hetero Atom))
AB Modular synthesis and substrate stereocontrol were combined to furnish 18,000 diverse 1,3-dioxanes whose distribution in chemical space rivals that of a reference set of over 2,000 bioactive small mols. Library quality was assessed at key synthetic stages, culminating in a detailed postsynthesis anal. of purity, yield, and structural characterizability, and the resynthesis of library subsets that did not meet quality stds. The importance of this anal.-resynthesis process is highlighted by the discovery of new biol. probes through organismal and protein binding assays, and by determination of the building block and stereochem. basis for their bioactivity. This evaluation of a portion of the 1,3-dioxane library suggests that many addnl. probes for chemical genetics will be identified as the entire library becomes biol. annotated.
ST combinatorial library dioxane prepn atrioventricular block induction; calmodulin binding combinatorial library dioxane prepn
IT Heart
(atrioventricular node, block; modular synthesis and preliminary biol. evaluation of stereochem. diverse 1,3-dioxanes)
IT Calmodulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(binding; modular synthesis and preliminary biol. evaluation of stereochem. diverse 1,3-dioxanes)
IT Combinatorial library
(modular synthesis and preliminary biol. evaluation of stereochem. diverse 1,3-dioxanes)
IT 505-22-6DP, 1,3-Dioxane, derivs. 845796-60-3P 845796-61-4P 845796-62-5P 845796-63-6P 845796-64-7P **845796-65-8P**

RL: CPN (Combinatorial preparation); PAC (Pharmacological activity); BIOL (Biological study); CMBI (Combinatorial study); PREP (Preparation)
(modular synthesis and preliminary biol. evaluation of stereochem. diverse 1,3-dioxanes)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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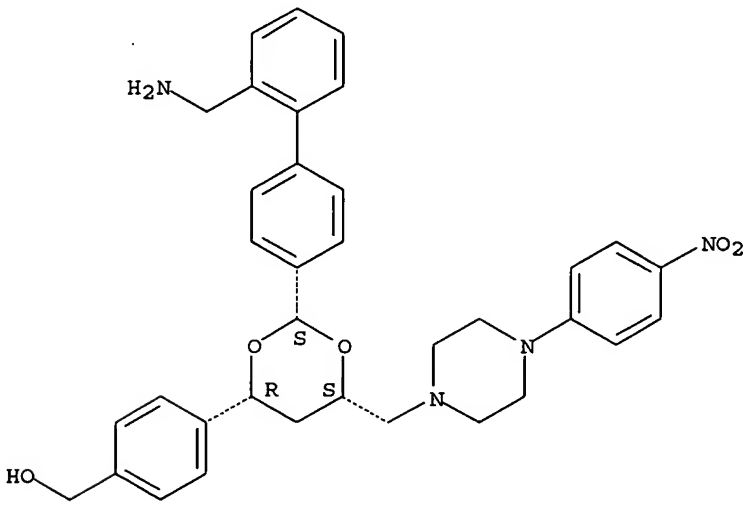
IT **845796-65-8P**

RL: CPN (Combinatorial preparation); PAC (Pharmacological activity); BIOL (Biological study); CMBI (Combinatorial study); PREP (Preparation)
(modular synthesis and preliminary biol. evaluation of stereochem. diverse 1,3-dioxanes)

RN 845796-65-8 HCAPLUS

CN Benzenemethanol, 4-[(2S,4R,6S)-2-[2'-(aminomethyl)[1,1'-biphenyl]-4-yl]-6-[[4-(4-nitrophenyl)-1-piperazinyl]methyl]-1,3-dioxan-4-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L38 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:310834 HCAPLUS

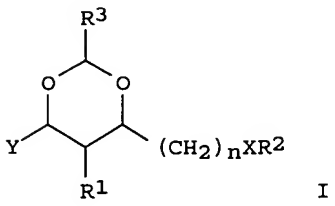
DN 140:339332
ED Entered STN: 16 Apr 2004
TI Preparation of trisubstituted dioxanes as histone deacetylase inhibitors.
IN **Schreiber, Stuart L.**; **Sternson, Scott M.**; Wong, Jason C.; **Grozinger, Christina M.**; Haggarty, Stephen J.; **Koeller, Kathryn M.**
PA USA
SO U.S. Pat. Appl. Publ., 177 pp., Cont.-in-part of U.S. Pat. Appl. 2003 187,027.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K031-52
ICS A61K031-506; A61K031-335
INCL 514263230; 514269000; 514452000; 544269000; 544310000
CC 28-11 (Heterocyclic Compounds (More Than One Hetero Atom))
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004072849	A1	20040415	US 2003-621276	20030717 <--
US 2003187027	A1	20031002	US 2002-144316	20020509 <--
PRAI US 2001-289850P	P	20010509 <--		
US 2002-144316	A2	20020509 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004072849	ICM	A61K031-52
	ICS	A61K031-506; A61K031-335
	INCL	514263230; 514269000; 514452000; 544269000; 544310000
US 2004072849	NCL	514/263.230
	ECLA	C07D319/06; C07D405/06+319+211; C07D405/12+319+257; C07D413/12+319+263B; C07D417/12+319+277; C07D491/10+317A+221A <--
US 2003187027	NCL	514/336.000
	ECLA	C07D319/06; C07D405/06+319+211; C07D405/12+319+257; C07D413/12+319+263B; C07D417/12+319+277; C07D491/10+317A+221A <--

OS MARPAT 140:339332
GI



I

AB Title compds. [I; R1, Y = H, aliphatyl, alicyclyl, heteroaliphatyl, heterocyclyl, aryl, heteroaryl; n = 1-5; R2 = R1, protecting group; X = O, S, C(R2a)2, NR2a; R2R2a = atoms to form alicyclyl, heterocyclyl, aryl, heteroaryl; R3 = aliphatyl, alicyclyl, heteroaliphatyl, heterocyclyl, aryl, heteroaryl], were claimed. Thus, rel-N-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N'-hydroxy-octanediamide (tubacin, claimed compound) at ≥125 nM in A549 cells strongly increased α-tubulin acetylation levels. The present invention addnl. provides methods for modulating the glucose-sensitive subset of genes downstream of Ure2p.
ST dioxane trisubstituted prepn histone deacetylase inhibitor; cancer treatment aryldioxane prepn
IT Solid phase synthesis
(combinatorial; preparation of trisubstituted dioxanes as histone

deacetylase inhibitors)
IT Antitumor agents
Human
(preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT Hydroxamic acids
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT Combinatorial chemistry
(solid-phase; preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT Neoplasm
(treatment; preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT Tubulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α-, deacetylation inhibitors; preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT **537049-40-4P**, Tubacin 537049-41-5P, Histacin
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(claimed compound; preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT 9076-57-7, Histone deacetylase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors, HDAC1 or HDAC6; preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT 438496-81-2, Tubulin deacetylase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT 475161-08-1P
RL: BPN (Biosynthetic preparation); PUR (Purification or recovery); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT 332925-19-6P **332925-20-9P** 332925-21-0P **394657-68-2P**
394657-69-3P **475161-04-7P** 475161-05-8P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT 475160-81-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT 475161-07-0P
RL: PUR (Purification or recovery); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT 56-91-7, 4-Aminomethylbenzoic acid 149-73-5, Trimethyl orthoformate 505-48-6, Suberic acid 589-29-7, 1,4-Benzenedimethanol 619-66-9, 4-Formylbenzoic acid 623-04-1, 4-Aminobenzyl alcohol 873-75-6, 4-Bromobenzyl alcohol 1877-77-6, 3-Aminobenzyl alcohol 2227-29-4, Chlorodiisopropylsilane 20445-31-2 38002-45-8, 3-Trimethylsilylpropargyl bromide 39959-54-1, 3-Bromobenzylamine hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT 146952-73-0P, (4-((tert-Butyldiphenylsilanoxy)methyl)phenyl)methanol 164470-64-8P 196880-47-4P, 4-((tert-Butyldiphenylsilanoxy)methyl)benzaldehyde 206537-33-9P 206537-34-0P 332925-17-4P 475160-70-4P, (4-(Diisopropylsilanyl)phenyl)methanol 475160-73-7P 475160-74-8P 475160-75-9P 475160-76-0P 475160-77-1P 475160-78-2P 475160-79-3P 475160-80-6P 475160-82-8P 475160-83-9P 475160-85-1P 475160-87-3P

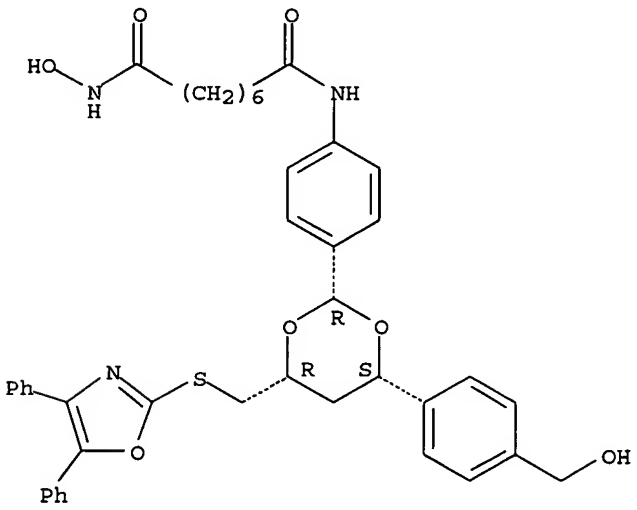
475160-88-4P 475160-89-5P 475160-90-8P 475160-91-9P 475160-92-0P
475160-93-1P 475160-94-2P 475160-95-3P 475160-96-4P 475160-97-5P
475160-98-6P 475160-99-7P 475161-00-3P 475161-01-4P 475161-02-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of trisubstituted dioxanes as histone deacetylase inhibitors)

IT **537049-40-4P**, Tubacin
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(claimed compound; preparation of trisubstituted dioxanes as histone deacetylase inhibitors)

RN 537049-40-4 HCAPLUS

CN Octanediamide, N-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N'-hydroxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:408167 HCAPLUS
DN 140:124434
ED Entered STN: 29 May 2003
TI Multidimensional Chemical Genetic Analysis of Diversity-Oriented Synthesis-Derived Deacetylase Inhibitors Using Cell-Based Assays
AU Haggarty, Stephen J.; **Koeller, Kathryn M.**; Wong, Jason C.; Butcher, Rebecca A.; **Schreiber, Stuart L.**
CS Departments of Molecular and Cellular Biology, **Harvard** University, Cambridge, MA, 02138, USA
SO Chemistry & Biology (2003), 10(5), 383-396
CODEN: CBOLE2; ISSN: 1074-5521
PB Cell Press
DT Journal
LA English
CC 7-3 (Enzymes)
Section cross-reference(s): 9
AB Systematic chemical genetics aims to explore the space representing interactions between small mols. and biol. systems. Beyond measuring binding interactions and enzyme inhibition, measuring changes in the activity of proteins in intact signaling networks is necessary. Toward this end, we are partitioning chemical space into regions with different biol. activities using a panel of cell-based assays and small mol. "chemical genetic modifiers. " Herein, we report on the use of this methodol. for

the discovery of 617 small mol. inhibitors of histone deacetylases from a multidimensional screen of an encoded, diversity-oriented synthesis library. Following decoding of chemical tags and resynthesis, we demonstrate the selectivity of one inhibitory mol. (tubacin) toward α-tubulin deacetylation and another (histacin) toward histone deacetylation. These small mols. will facilitate dissecting the role of acetylation in a variety of cell biol. processes.

ST multidimensional chem genetic analysis deacetylase inhibitor

IT Histones
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(H3; multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

IT Histones
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(H4; multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

IT Hydroxamic acids
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(functional group of 1,3-dioxane derivs.; multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

IT Animal cell
(mammalian; multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

IT Deacetylation
Human
Principal component analysis
(multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

IT Histones
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

IT Tubulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α-; multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

IT 9025-12-1 9076-57-7, Histone deacetylase **537049-40-4**, Tubacin
537049-41-5, Histacin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

IT 505-22-6D, 1,3-Dioxane, derivs.
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD

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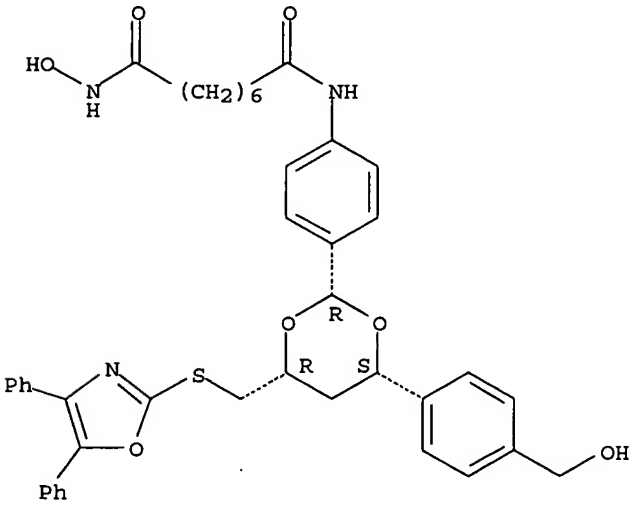
IT **537049-40-4**, Tubacin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(multidimensional chemical genetic anal. of diversity-oriented synthesis-derived deacetylase inhibitors using cell-based assays and selectivity towards α-tubulin and histone deacetylation)

RN 537049-40-4 HCAPLUS

CN Octanediamide, N-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N'-hydroxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:329363 HCAPLUS
DN 139:94978
ED Entered STN: 30 Apr 2003
TI Domain-selective small-molecule inhibitor of histone deacetylase 6 (HDAC6)-mediated tubulin deacetylation
AU Haggarty, Stephen J.; **Koeller, Kathryn M.**; Wong, Jason C.; **Grozinger, Christina M.**; **Schreiber, Stuart L.**
CS Departments of Molecular and Cellular Biology, **Harvard** University, Cambridge, MA, 02138, USA
SO Proceedings of the National Academy of Sciences of the United States of America (2003), 100(8), 4389-4394
CODEN: PNASA6; ISSN: 0027-8424
PB National Academy of Sciences
DT Journal
LA English
CC 1-6 (Pharmacology)
AB Protein acetylation, especially histone acetylation, is the subject of both research and clin. investigation. At least four small-mol. histone deacetylase inhibitors are currently in clin. trials for the treatment of cancer. These and other inhibitors also affect microtubule acetylation. A multidimensional, chemical genetic screen of 7392 small mols. was used to discover "tubacin," which inhibits α-tubulin deacetylation in mammalian cells. Tubacin does not affect the level of histone acetylation, gene-expression patterns, or cell-cycle progression. We provide evidence that class II histone deacetylase 6 (HDAC6) is the intracellular target of tubacin. Only one of the two catalytic domains of HDAC6 possesses tubulin deacetylase activity, and only this domain is bound by tubacin. Tubacin treatment did not affect the stability of microtubules but did decrease cell motility. HDAC6 overexpression disrupted the localization of p58, a protein that mediates binding of Golgi elements to microtubules. Our results highlight the role of α-tubulin acetylation in mediating the localization of microtubule-associated proteins. They also suggest that small mols. that selectively inhibit HDAC6-mediated α-tubulin deacetylation, a first example of which is tubacin, might have therapeutic applications as antimetastatic and antiangiogenic agents.
ST histone deacetylase tubacin niltubacin human antitumor
IT Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(MAP (microtubule-associated protein); domain-selective small-mol. inhibitor of histone deacetylase 6 (HDAC6)-mediated tubulin deacetylation)
IT Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(P58; domain-selective small-mol. inhibitor of histone deacetylase 6 (HDAC6)-mediated tubulin deacetylation)
IT Angiogenesis inhibitors
Antitumor agents
Cell cycle
Drug screening
Enzyme functional sites
Human
(domain-selective small-mol. inhibitor of histone deacetylase 6 (HDAC6)-mediated tubulin deacetylation)
IT Tubulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(domain-selective small-mol. inhibitor of histone deacetylase 6 (HDAC6)-mediated tubulin deacetylation)
IT Gene
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(expression; domain-selective small-mol. inhibitor of histone deacetylase 6 (HDAC6)-mediated tubulin deacetylation)
IT 9076-57-7, Histone deacetylase

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(domain-selective small-mol. inhibitor of histone deacetylase 6
(HDAC6)-mediated tubulin deacetylation)
IT 537049-40-4, Tubacin 560102-50-3, Niltubacin
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(domain-selective small-mol. inhibitor of histone deacetylase 6
(HDAC6)-mediated tubulin deacetylation)
RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
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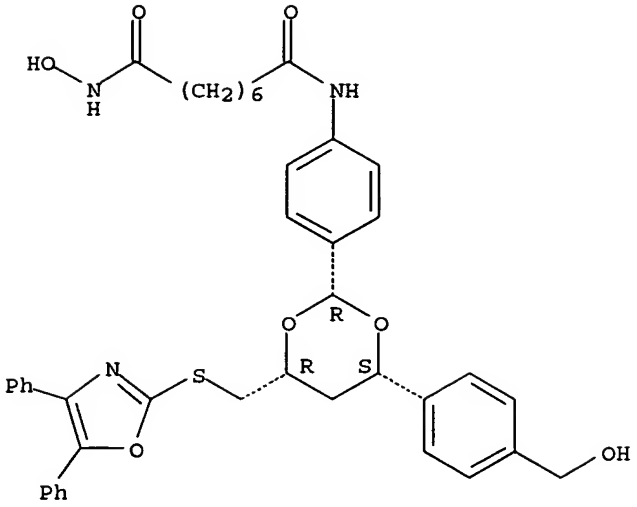
IT 537049-40-4, Tubacin
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(domain-selective small-mol. inhibitor of histone deacetylase 6
(HDAC6)-mediated tubulin deacetylation)
RN 537049-40-4 HCAPLUS
CN Octanediamide, N-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-
6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N'-hydroxy-, rel-
(9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:292422 HCAPLUS
DN 139:17111
ED Entered STN: 16 Apr 2003
TI Structural Biasing Elements for In-Cell Histone Deacetylase Paralog Selectivity
AU Wong, Jason C.; Hong, Roger; **Schreiber, Stuart L.**
CS Department of Chemistry and Chemical Biology **Harvard** Institute of Chemistry and Cell Biology, **Howard Hughes** Medical Institute, **Harvard** University, Cambridge, MA, 02138, USA
SO Journal of the American Chemical Society (2003), 125(19), 5586-5587
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
CC 1-3 (Pharmacology)
AB We use the structural dissection of two 1,3-dioxanes with in-cell histone deacetylase (HDAC) paralog selectivity to identify key elements for selective HDAC inhibitors. We demonstrate that o-aminoanilides are inactive toward HDAC6 while apparently inhibiting deacetylases that act upon histone substrates. This finding has important clin. implications for the development of HDAC inhibitor-based treatments that do not interfere with microtubule dynamics associated with HDAC6. We also show that suberoylanilide hydroxamic acid (SAHA) alone is a nonparalog-selective HDAC inhibitor and that the 1,3-dioxane diversity appended to SAHA is essential for HDAC6 paralog selectivity.
ST structure activity relationship biasing element histone deacetylase paralog design
IT Structure-activity relationship
(enzyme-inhibiting; structural biasing elements for In-cell histone deacetylase paralog selectivity)
IT 9076-57-7, Histone deacetylase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(structural biasing elements for In-cell histone deacetylase paralog selectivity)
IT 58880-19-6, Trichostatin A 133155-90-5, Trapoxin B 149647-78-9, Suberoylanilide hydroxamic acid 537034-14-3 537034-15-4 537034-16-5 537034-17-6 **537049-40-4**, Tubacin 537049-41-5, Histacin
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(structural biasing elements for In-cell histone deacetylase paralog selectivity)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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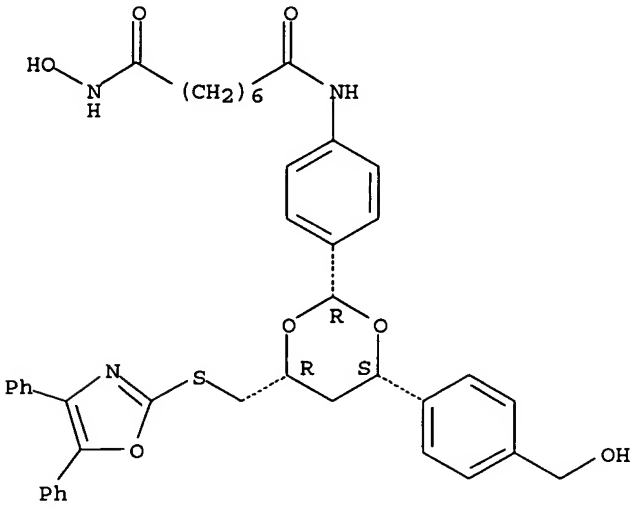
IT 537049-40-4, Tubacin
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(structural biasing elements for In-cell histone deacetylase paralog selectivity)
RN 537049-40-4 HCAPLUS
CN Octanediamide, N-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N'-hydroxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:868720 HCAPLUS
DN 137:370095
ED Entered STN: 15 Nov 2002
TI Preparation of dioxanes as inhibitors of histone deacetylase.
IN **Schreiber, Stuart L.**; **Sternson, Scott M.**; Wong, Jason C.; **Grozinger, Christina M.**
PA President & Fellows of Harvard College, USA
SO PCT Int. Appl., 119 pp.

CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-00
ICS C07D319-06; C07D417-12; C07D413-12; C07D493-10; A61P035-00
CC 28-11 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 26
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002089782	A2	20021114	WO 2002-US14835	20020509 <--
WO 2002089782	A3	20030227		

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PRAI US 2001-289850P P 20010509 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002089782	ICM	A61K031-00
	ICS	C07D319-06; C07D417-12; C07D413-12; C07D493-10; A61P035-00
WO 2002089782	ECLA	C07D319/06; C07D405/06+319+211; C07D405/12+319+257; C07D413/12+319+263B; C07D417/12+319+277; C07D491/10+317A+221A <--

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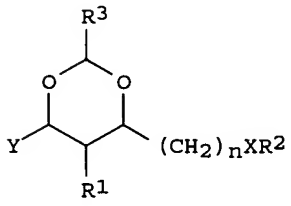
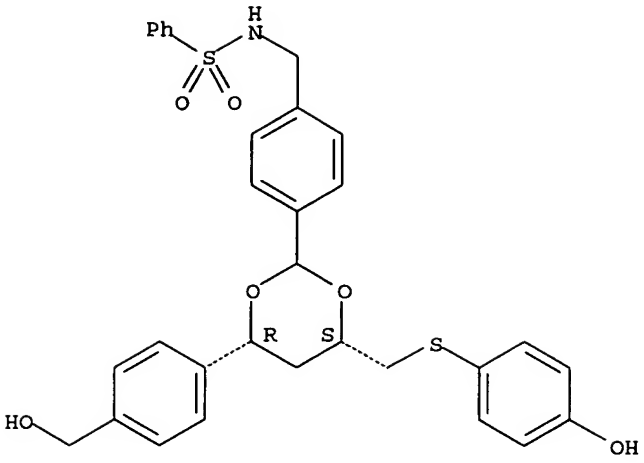


I

AB Title compds. [I; R1 = H, (substituted) aliphatyl, heteroaliphatyl, aryl, heteroaryl, etc.; n = 1-5; R2 = H, protecting group, (substituted) aliphatyl, heteroaliphatyl, aryl, heteroaryl, etc.; X = O, S, (substituted) CH2, imino; R3 = (substituted) aliphatyl, heteroaliphatyl, aryl, heteroaryl, etc.; Y = H, aliphatyl, heteroaliphatyl, aryl, heteroaryl, etc.], were prepared Thus, (αS)-2-acetoxy-N-[[4-[(4S,6R)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]methyl]propionamide (solid phase preparation given) inhibited HDAC1 and HDAC6 with IC50's of about 1 μM. The present invention addnl. provides methods for modulating the glucose-sensitive subset of genes downstream of Ure2p.
ST dioxane prepn histone deacetylase inhibitor; HDAC1 HDAC6 inhibitor dioxane prepn; uretupamine analog prepn anticancer
IT Antitumor agents
Combinatorial library
Human
Solid phase synthesis
(preparation of dioxanes as inhibitors of histone deacetylase)
IT Neoplasm

(treatment; preparation of dioxanes as inhibitors of histone deacetylase)
IT 9076-57-7, Histone deacetylase 134773-68-5, Protein (Saccharomyces cerevisiae clone p1I-Bs gene URE2)
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; preparation of dioxanes as inhibitors of histone deacetylase)
IT 475160-81-7P 475160-82-8P
RL: ANT (Analyte); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(preparation of dioxanes as inhibitors of histone deacetylase)
IT 475161-07-0P 475161-08-1P
RL: BPN (Biosynthetic preparation); PUR (Purification or recovery); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation of dioxanes as inhibitors of histone deacetylase)
IT 332925-19-6P **332925-20-9P** 332925-21-0P **394657-68-2P**
475161-03-6P **475161-04-7P** 475161-05-8P
475161-06-9P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of dioxanes as inhibitors of histone deacetylase)
IT 56-91-7, 4-(Aminomethyl)benzoic acid 505-48-6, Suberic acid 589-29-7, 1,4-Benzenedimethanol 623-04-1, 4-Aminobenzyl alcohol 873-75-6, 4-Bromobenzyl alcohol 1877-77-6, 3-Aminobenzyl alcohol 17564-64-6, Chloromethylphthalimide 20445-31-2, (R)-MTPA 38002-45-8, 3-Trimethylsilylpropargyl bromide 39959-54-1, 3-Bromobenzylamine hydrochloride 87199-16-4, 3-Formylphenylboronic acid 87199-17-5, 4-Formylphenylboronic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of dioxanes as inhibitors of histone deacetylase)
IT 146952-73-0P 164470-64-8P 196880-47-4P 206537-33-9P 206537-34-0P
332925-17-4P 475160-70-4P 475160-73-7P 475160-74-8P 475160-75-9P
475160-76-0P 475160-77-1P 475160-78-2P 475160-79-3P 475160-80-6P
475160-83-9P 475160-85-1P 475160-87-3P 475160-88-4P 475160-89-5P
475160-90-8P 475160-91-9P 475160-92-0P 475160-93-1P 475160-94-2P
475160-95-3P 475160-96-4P 475160-97-5P 475160-98-6P 475160-99-7P
475161-00-3P 475161-01-4P 475161-02-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of dioxanes as inhibitors of histone deacetylase)
IT **332925-20-9P**
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of dioxanes as inhibitors of histone deacetylase)
RN 332925-20-9 HCAPLUS
CN Benzenesulfonamide, N-[[4-[(4R,6S)-4-[4-(hydroxymethyl)phenyl]-6-[[(4-hydroxyphenyl)thio]methyl]-1,3-dioxan-2-yl]phenyl]methyl]-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:312569 HCAPLUS
DN 137:75366
ED Entered STN: 26 Apr 2002
TI Dissecting glucose signalling with diversity-oriented synthesis and small-molecule microarrays
AU Kuruvilla, Finny G.; Shamji, Alykhan F.; **Sternson, Scott M.**; Hergenrother, Paul J.; **Schreiber, Stuart L.**
CS **Howard Hughes** Medical Institute, Institute for Chemistry and Cell Biology, Bauer Center for Genomics Research, Department of Chemistry and Chemical Biology, **Harvard** University, Cambridge, MA, 02138, USA
SO Nature (London, United Kingdom) (2002), 416(6881), 653-657
CODEN: NATUAS; ISSN: 0028-0836
PB Nature Publishing Group
DT Journal
LA English
CC 9-2 (Biochemical Methods)
AB Small mols. that alter protein function provide a means to modulate biol. networks with temporal resolution Here the authors demonstrate a potentially general and scalable method of identifying such mols. by application to a particular protein, Ure2p, which represses the transcription factors Gln3p and Nil1p. By probing a high-d. microarray of small mols. generated by diversity-oriented synthesis with fluorescently labeled Ure2p, the authors performed 3780 protein-binding assays in parallel and identified several compds. that bind Ure2p. One compound, which the authors call uretupamine, specifically activates a glucose-sensitive transcriptional pathway downstream of Ure2p. Whole-genome transcription profiling and chemical epistasis demonstrate the remarkable Ure2p specificity of uretupamine and its ability to modulate the glucose-sensitive subset of genes downstream of Ure2p. These results demonstrate that diversity-oriented synthesis and small-mol. microarrays can be used to identify small mols. that bind to a protein of interest, and that these small mols. can regulate specific functions of the protein.
ST uretupamine binding protein Ure2p signal analysis
IT Signal transduction, biological
Transcription, genetic
(dissecting glucose signalling with diversity-oriented synthesis and small-mol. microarrays)
IT Proteins
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(gene URE2; dissecting glucose signalling with diversity-oriented synthesis and small-mol. microarrays)
IT **441063-83-8**, Uretupamine A **441063-84-9**, Uretupamine B

441063-85-0, Uretupamine C **441063-86-1**, Uretupamine D
441063-87-2, Uretupamine E **441063-88-3**, Uretupamine F
441063-89-4, Uretupamine G 441063-90-7, Uretupamine H
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(dissecting glucose signalling with diversity-oriented synthesis and small-mol. microarrays)

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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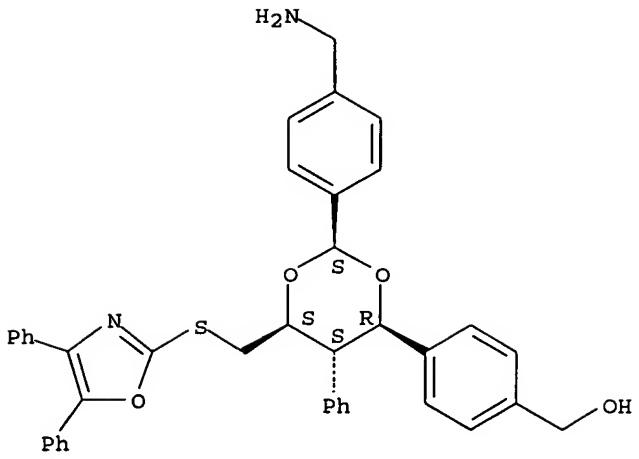
IT **441063-83-8**, Uretupamine A
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(dissecting glucose signalling with diversity-oriented synthesis and small-mol. microarrays)

RN 441063-83-8 HCAPLUS

CN Benzenemethanol, 4-[(2R,4S,5R,6R)-2-[4-(aminomethyl)phenyl]-6-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-5-phenyl-1,3-dioxan-4-yl]-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:864080 HCAPLUS
DN 136:144662
ED Entered STN: 30 Nov 2001
TI Synthesis of 7200 Small Molecules Based on a Substructural Analysis of the Histone Deacetylase Inhibitors Trichostatin and Trapoxin
AU **Sternson, Scott M.**; Wong, Jason C.; **Grozinger, Christina M.**; **Schreiber, Stuart L.**
CS **Howard Hughes** Medical Institute Institute of Chemistry and Cell Biology Department of Chemistry Chemical Biology, **Harvard** University, Cambridge, MA, 02138, USA
SO Organic Letters (2001), 3(26), 4239-4242
CODEN: ORLEF7; ISSN: 1523-7060
PB American Chemical Society
DT Journal
LA English
CC 1-3 (Pharmacology)
AB Seventy-two hundred potential inhibitors of the histone deacetylase (HDAC) enzyme family, based on a 1,3-dioxane diversity structure, were synthesized on polystyrene macrobeads. The compds. were arrayed for biol. assays in a "one bead-one stock solution" format. Metal-chelating functional groups were used to direct the 1,3-dioxanes to HDAC enzymes, which are zinc hydrolases. Representative structures from this library were tested for inhibitory activity and the 1,3-dioxane structure was shown to be compatible with HDAC inhibition.
ST histone deacetylase inhibitor trichostatin trapoxin structure; antitumor dioxane deriv prepn SAR
IT Antitumor agents
Structure-activity relationship
(synthesis of 7200 small mols. based on a substructural anal. of histone deacetylase inhibitors trichostatin and trapoxin)
IT 9076-57-7, Histone deacetylase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(synthesis of 7200 small mols. based on a substructural anal. of histone deacetylase inhibitors trichostatin and trapoxin)
IT 58880-19-6, Trichostatin A 133155-89-2 **394657-68-2** **394657-69-3** 394657-70-6
RL: PAC (Pharmacological activity); BIOL (Biological study)
(synthesis of 7200 small mols. based on a substructural anal. of histone deacetylase inhibitors trichostatin and trapoxin)
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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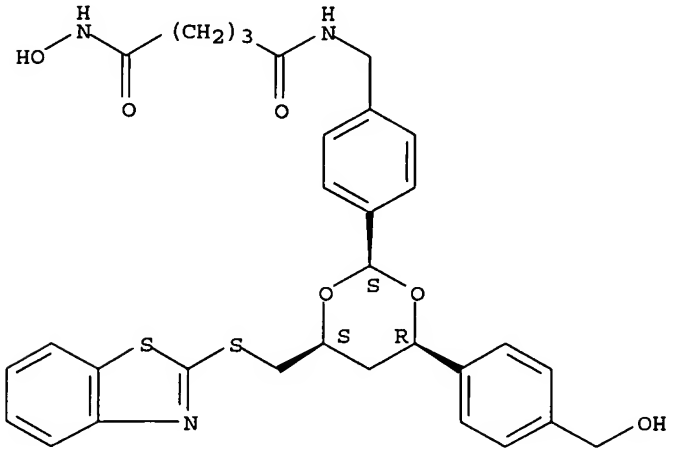
IT 394657-68-2
RL: PAC (Pharmacological activity); BIOL (Biological study)
(synthesis of 7200 small mols. based on a substructural anal. of histone deacetylase inhibitors trichostatin and trapoxin)

RN 394657-68-2 HCAPLUS

CN Pentanediamide, N-[[4-[(2R,4R,6S)-4-[(2-benzothiazolylthio)methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]methyl]-N'-hydroxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:68706 HCAPLUS
DN 134:280788
ED Entered STN: 31 Jan 2001
TI Split-Pool Synthesis of 1,3-Dioxanes Leading to Arrayed Stock Solutions of Single Compounds Sufficient for Multiple Phenotypic and Protein-Binding Assays
AU **Sternson, Scott M.**; Louca, Joseph B.; Wong, Jason C.; **Schreiber, Stuart L.**
CS **Harvard** Institute of Chemistry and Cell Biology, **Harvard** Medical School, Boston, MA, 02115, USA
SO Journal of the American Chemical Society (2001), 123(8), 1740-1747

CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
CC 28-11 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 9
OS CASREACT 134:280788
AB Diversity-oriented organic synthesis offers the promise of advancing chemical genetics, where small mols. are used to explore biol. While the split-pool synthetic method is theor. the most effective approach for the production of large collections of small mols., it has not been widely adopted due to numerous tech. and anal. hurdles. The authors have developed a split-pool synthesis leading to an array of stock solns. of single 1,3-dioxanes. The quantities of compds. are sufficient for hundreds of phenotypic and protein-binding assays. The average concentration of these stock solns. derived from a single synthesis bead was determined to be 5.4 mM in 5 μL of DMSO. A mass spectrometric strategy to identify the structure of mols. from a split-pool synthesis was shown to be highly accurate. Individual members of the 1,3-dioxane library have activity in a variety of phenotypic and protein-binding assays. The procedure developed in this study allows many assays to be performed with compds. derived from individual synthesis beads. The synthetic compds. identified in these assays should serve as useful probes of cellular and organismal processes.
ST split pool synthesis dioxane; multiple phenotypic protein binding assay dioxane
IT Phenotypes
(split-pool synthesis of 1,3-dioxanes leading to arrayed stock solns. of single compds. sufficient for multiple phenotypic and protein-binding assays)
IT Proteins, general, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(split-pool synthesis of 1,3-dioxanes leading to arrayed stock solns. of single compds. sufficient for multiple phenotypic and protein-binding assays)
IT 332925-18-5P 332925-19-6P **332925-20-9P** 332925-21-0P **333326-20-8P 333326-22-0P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(split-pool synthesis of 1,3-dioxanes leading to arrayed stock solns. of single compds. sufficient for multiple phenotypic and protein-binding assays)
IT 177-11-7, 1,4-Dioxa-8-azaspiro[4.5]decane 637-89-8 1121-31-9 6670-13-9 13183-79-4 29739-88-6 36394-75-9 63638-93-7 332925-17-4 475160-87-3 475160-91-9 681219-14-7 681221-63-6 681225-91-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(split-pool synthesis of 1,3-dioxanes leading to arrayed stock solns. of single compds. sufficient for multiple phenotypic and protein-binding assays)
IT 332925-16-3DP, resin bound
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(split-pool synthesis of 1,3-dioxanes leading to arrayed stock solns. of single compds. sufficient for multiple phenotypic and protein-binding assays)
RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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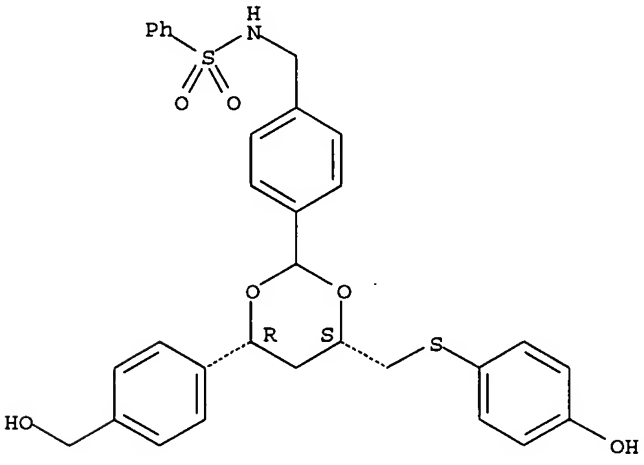
(35) Yarrow, J; Unpublished results

IT **332925-20-9P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(split-pool synthesis of 1,3-dioxanes leading to arrayed stock solns. of single compds. sufficient for multiple phenotypic and protein-binding assays)

RN 332925-20-9 HCAPLUS

CN Benzenesulfonamide, N-[[4-[(4R,6S)-4-[4-(hydroxymethyl)phenyl]-6-[[(4-hydroxyphenyl)thio]methyl]-1,3-dioxan-2-yl]phenyl]methyl]-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L38 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1998:251317 HCAPLUS
DN 128:319046
ED Entered STN: 02 May 1998

TI Droplet assay system for screening combinatorial libraries
IN Schreiber, Stuart L.; Shair, Matthew D.; Borchardt, Allen J.; You, Angie J.; Huang, Jing; Foley, Mike; Tan, Derek; Whitesides, George; Jackman, Rebecca J.
PA President and Fellows of Harvard College, USA
SO PCT Int. Appl., 126 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-53
CC 9-1 (Biochemical Methods)
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9816830	A2	19980423	WO 1997-US19110	19971015
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9852391	A1	19980511	AU 1998-52391	19971015
PRAI	US 1996-29128P	P	19961016		
	US 1997-49864P	P	19970606		
	WO 1997-US19110	W	19971015		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9816830	ICM	G01N033-53
WO 9816830	ECLA	B01J019/00C; G01N033/50

AB The present invention provides a novel system for simultaneously screening a large number of compds. and identifying compds. having desirable chemical or biol. activities. According to the invention, test compds. are isolated in and introduced into liquid droplets within which their activities are studied. Multiple droplets are displayed simultaneously on a single surface without risk of confusion because the sep. identity of each droplet is maintained and diffusion of test compds. from one droplet to another is avoided. In certain embodiments, these goals are accomplished through reliance on droplet surface tension. In other embodiments, the droplets are localized in micro-wells that retain droplet integrity. The system is particularly useful for identifying compds. that act e.g., as catalysts, or that have biol. activities. In preferred embodiments of the invention, the compds. are assayed in vivo.

ST combinatorial library droplet assay system; droplet assay app
IT Combinatorial library
(droplet assay system for simultaneously assaying combinatorial libraries and identifying compds. of chemical or biol. activities)
IT Bioassay
(droplet; droplet assay system for simultaneously screening combinatorial libraries and identifying compds. of chemical or biol. activities)
IT 65-85-0, Benzoic acid, reactions 79-22-1, Methyl chloroformate 99-05-8, 3-Aminobenzoic acid 100-51-6, Benzyl alcohol, reactions 103-71-9, Phenyl isocyanate, reactions 103-80-0, Phenylacetyl chloride 108-31-6, 2,5-Furandione, reactions 109-73-9, Butylamine, reactions 109-85-3, (2-Methoxyethyl)amine 109-89-7, Diethylamine, reactions 110-89-4, Piperidine, reactions 123-62-6, Propionic anhydride 141-82-2, Malonic acid, reactions 552-89-6, 2-Nitrobenzaldehyde 563-96-2, Glyoxylic acid monohydrate 619-66-9, 4-Carboxybenzaldehyde 631-61-8, Ammonium acetate 636-98-6, 1-Iodo-4-nitrobenzene 922-68-9, Methyl glyoxylate 924-44-7, Ethyl glyoxylate 1711-02-0, 4-Iodobenzoyl chloride 1877-77-6, 3-Aminobenzyl alcohol 5416-93-3, 4-Methoxyphenyl isocyanate 5470-11-1, Hydroxylamine hydrochloride 24424-99-5, Di-tert-butyl dicarbonate 24850-33-7, Allyltributyltin 39178-35-3,

Isonicotinoyl chloride hydrochloride 76985-84-7 81863-45-8,
3-Amino-4-methylbenzyl alcohol 82911-69-1 88574-06-5,
6-(9-Fluorenylmethoxycarbonylamino)hexanoic acid 104987-11-3
113928-90-8, 3-Amino-4-methoxybenzyl alcohol 141565-14-2 206537-46-4D,
resin-bound
RL: RCT (Reactant); RACT (Reactant or reagent)
(droplet assay system for simultaneously assaying combinatorial
libraries and identifying compds. of chemical or biol. activities)

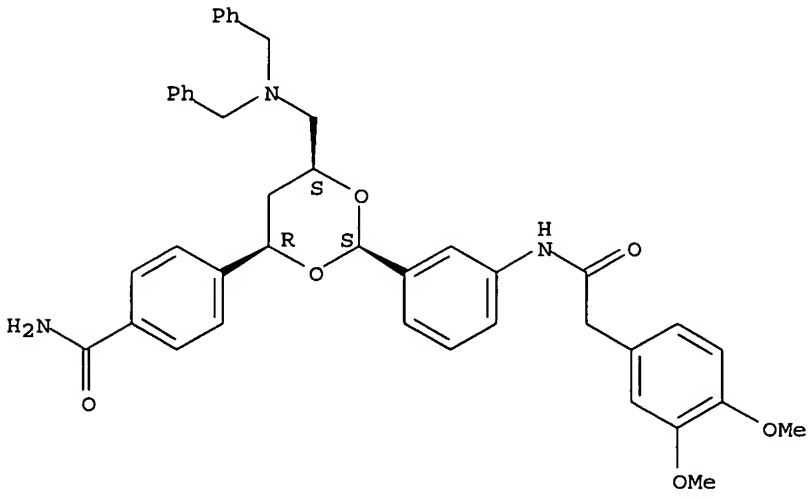
IT 1453-82-3DP, 4-Carbamoylpyridine, TGR-ANP-ACA resin-bound 5678-48-8P
14454-14-9P, N-(4-Iodophenyl)hydroxylamine 15164-44-0P,
4-Iodobenzaldehyde 78767-55-2P 83670-49-9P, N-(4-
Bromobenzyl)hydroxylamine 88574-06-5DP, ANP resin-bound 206537-10-2DP,
resin-bound 206537-15-7P 206537-16-8P 206537-17-9DP, ANP-TGR
resin-bound 206537-18-0DP, ANP-TGR resin-bound 206537-19-1DP, ANP-TGR
resin-bound 206537-20-4DP, ANP-TGR resin-bound 206537-21-5DP,
resin-bound 206537-21-5P 206537-23-7P, N-(4-Iodobenzyl)hydroxylamine
206537-24-8P 206537-25-9P 206537-26-0P 206537-27-1P 206537-28-2DP,
Tentagel-bound 206537-28-2P 206537-29-3P 206537-30-6P 206537-31-7P
206537-32-8P 206537-33-9P 206537-34-0P 206537-35-1P 206537-36-2P
206537-37-3P 206537-38-4P 206537-39-5P 206537-40-8P 206537-41-9DP,
TGR-ANP-ACA resin-bound 206537-42-0DP, TGR-ANP-ACA resin-bound
206537-43-1DP, TGR-ANP-ACA resin-bound
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(droplet assay system for simultaneously assaying combinatorial
libraries and identifying compds. of chemical or biol. activities)

IT 206537-10-2P 206537-11-3P **206537-12-4P** 206537-13-5DP,
resin-bound 206537-14-6DP, resin-bound 206537-22-6P 206537-44-2DP,
resin-bound 206537-45-3DP, resin-bound 206537-47-5P 206537-48-6DP,
resin-bound
RL: SPN (Synthetic preparation); PREP (Preparation)
(droplet assay system for simultaneously assaying combinatorial
libraries and identifying compds. of chemical or biol. activities)

IT **206537-12-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(droplet assay system for simultaneously assaying combinatorial
libraries and identifying compds. of chemical or biol. activities)

RN 206537-12-4 HCAPLUS
CN Benzeneacetamide, N-[3-[(2S,4R,6S)-4-[4-(aminocarbonyl)phenyl]-6-
[[bis(phenylmethyl)amino]methyl]-1,3-dioxan-2-yl]phenyl]-3,4-dimethoxy-
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



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L46  ANSWER 1 OF 10  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2001:764368  HCAPLUS
DN   136:69857
ED   Entered STN:  21 Oct 2001
TI   Acid-catalyzed cyclization of vinylsilanes bearing a hemiacetal group
AU   Miura, Katsukiyo; Takahashi, Tatsuyuki; Nishikori, Hisashi; Hosomi, Akira
CS   Department of Chemistry, Graduate School of Pure and Applied Sciences,
     University of Tsukuba, Tsukuba, 305-8571, Japan
SO   Chemistry Letters (2001), (10), 958-959
     CODEN: CMLTAG; ISSN: 0366-7022
PB   Chemical Society of Japan
DT   Journal
LA   English
CC   29-6 (Organometallic and Organometalloidal Compounds)
     Section cross-reference(s): 28
OS   CASREACT 136:69857
AB   In the presence of a catalytic amount of TsOH·H2O, hemiacetals
     derived from (Z)-4-trialkylsilyl-3-buten-1-ols and chloral were cyclized
     to 2-trichloromethyl-4-trialkylsilylmethyl-1,3-dioxanes in good to high
     yields.  The substrates bearing an allylic substituent achieved high
     levels of 1,2-asym. induction.  When the silyl group was a
     benzyldimethylsilyl group, the products could be efficiently converted to
     1,2,4-triol derivs. by oxidative cleavage of the silicon-carbon bond.
ST   acid catalyzed cyclization vinylsilane hemiacetal group; silyl butenol
     acid catalyzed cyclization; chloromethyl trialkylsilylmethyl dioxane prepn
     oxidative cleavage
IT   Cyclization
     Cyclization catalysts
        (acid-catalyzed cyclization of vinylsilanes bearing a hemiacetal group)
IT   Acetals
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (hemiacetals; acid-catalyzed cyclization of vinylsilanes bearing a
        hemiacetal group)
IT   75-87-6, Chloral   78-84-2, Isopropylcarboxaldehyde   100-52-7,
     Benzaldehyde, reactions   123-11-5, 4-Methoxybenzaldehyde, reactions
     555-16-8, 4-Nitrobenzaldehyde, reactions
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (acid-catalyzed cyclization of vinylsilanes bearing hemiacetal group
        with)
IT   385372-66-7   385372-67-8   385372-68-9   385372-69-0   385372-70-3
     385372-71-4   385372-72-5   385372-73-6   385372-74-7
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (acid-catalyzed cyclization of vinylsilanes bearing hemiacetal group
        with chloral)
IT   154673-67-3   385372-65-6
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (acid-catalyzed cyclization of with chloral)
IT   385372-75-8P   385372-77-0P   385372-79-2P   385372-81-6P   385372-83-8P
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (preparation and desilylation of)
IT   385372-76-9P   385372-78-1P   385372-80-5P   385372-82-7P   385372-84-9P
     385372-85-0P   385372-86-1P   385372-87-2P   385372-88-3P
     385372-89-4P   385372-90-7P   385372-91-8P   385372-92-9P
     385372-93-0P   385372-94-1P
     RL: SPN (Synthetic preparation); PREP (Preparation)
        (preparation of)
RE.CNT  23    THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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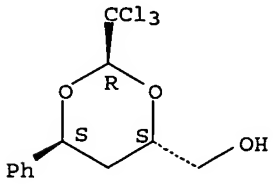
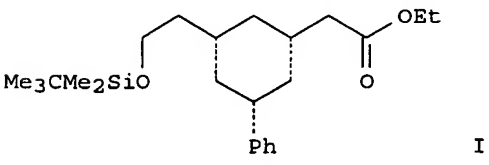
(23) Yang, X; J Org Chem 2001, V66, P739 HCAPLUS

IT **385372-89-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 385372-89-4 HCAPLUS
CN 1,3-Dioxane-4-methanol, 6-phenyl-2-(trichloromethyl)-, (2R,4S,6S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L46 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:156170 HCAPLUS
DN 134:340467
ED Entered STN: 06 Mar 2001
TI An enantioselective synthesis of benzylidene-protected syn-3,5-dihydroxy carboxylate esters via osmium, palladium, and base catalysis
AU Hunter, Thomas J.; O'Doherty, George A.
CS Department of Chemistry, University of Minnesota, Minneapolis, MN, 55455, USA
SO Organic Letters (2001), 3(7), 1049-1052
CODEN: ORLEF7; ISSN: 1523-7060
PB American Chemical Society
DT Journal
LA English
CC 28-11 (Heterocyclic Compounds (More Than One Hetero Atom))
OS CASREACT 134:340467
GI



I

AB The enantioselective syntheses of several protected syn-3,5-dihydroxy carboxylic esters, e.g. I, have been achieved from the corresponding achiral 1,3-dieneoates, e.g. Me3CsiMe2OCH2CH:CHCH:CHCO3Et. The route relies upon an enantio- and regioselective Sharpless dihydroxylation and a palladium-catalyzed reduction to form δ-hydroxy-1-enoates, e.g. (S)-Me3CMe2SiOCH2CH(OH)CH2CH:CHCO2Et. The resulting δ-hydroxy-1-enoates are subsequently converted into benzylidene-protected 3,5-dihydroxy carboxylic esters in one step. The benzylidene-protected 3,5-dihydroxy carboxylic esters are produced in good overall yields (25% to 51%) and high enantiomeric excesses (80% to >95%).

ST enantioselective synthesis benzylidene dihydroxy carboxylate ester; palladium enantioselective synthesis benzylidene carboxylate ester

IT Asymmetric synthesis and induction
Reduction
Reduction catalysts
Stereochemistry
(asym. synthesis of benzylidene-dihydroxy carboxylates via enantio- and regioselective Sharpless dihydroxylation and palladium-catalyzed reduction)

IT Esters, preparation
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(asym. synthesis of benzylidene-dihydroxy carboxylates via enantio- and regioselective Sharpless dihydroxylation and palladium-catalyzed reduction)

IT Hydroxylation
(stereoselective, di-, Sharpless, regioselective; asym. synthesis of benzylidene-dihydroxy carboxylates via enantio- and regioselective Sharpless dihydroxylation and palladium-catalyzed reduction)

IT 100-52-7, Benzaldehyde, reactions 541-41-3, Ethyl chloroformate 115349-62-7 120310-01-2 337508-92-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(asym. synthesis of benzylidene-dihydroxy carboxylates via enantio- and regioselective Sharpless dihydroxylation and palladium-catalyzed reduction)

IT 2396-84-1P 39806-16-1P 74418-28-3P 198009-56-2P 337508-75-5P 337508-76-6P 337508-77-7P 337508-78-8P 337508-79-9P 337508-86-8P 337508-87-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(asym. synthesis of benzylidene-dihydroxy carboxylates via enantio- and regioselective Sharpless dihydroxylation and palladium-catalyzed reduction)

IT 188924-78-9P 188924-79-0P 337508-80-2P 337508-81-3P 337508-82-4P 337508-83-5P 337508-84-6P 337508-85-7P 337508-88-0P 337508-89-1P 337508-90-4P 337508-91-5P 337508-93-7P 337508-94-8P 337508-95-9P 337508-96-0P 337508-97-1P 337508-98-2P 337508-99-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(asym. synthesis of benzylidene-dihydroxy carboxylates via enantio- and regioselective Sharpless dihydroxylation and palladium-catalyzed reduction)

IT 32315-10-9, Triphosgene 89238-99-3, 4-Methoxybenzyl trichloroacetimidate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of)

IT 140853-10-7
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of)

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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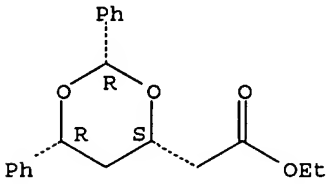
IT **337508-83-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(asym. synthesis of benzylidene-dihydroxy carboxylates via enantio- and regioselective Sharpless dihydroxylation and palladium-catalyzed reduction)

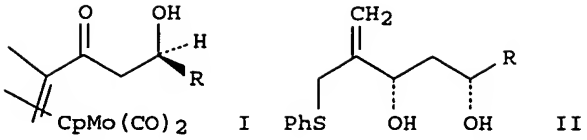
RN 337508-83-5 HCAPLUS

CN 1,3-Dioxane-4-acetic acid, 2,6-diphenyl-, ethyl ester, (2R,4S,6R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L46 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1995:183540 HCAPLUS
DN 122:30928
ED Entered STN: 12 Nov 1994
TI Utilization of the [CpMo(CO)2(η3-2-CH2COC3H4)]- Enolate for Stereoselective Synthesis of (1R*,3S*)-4-Pentene-1,3-diols
AU Liao, Ming-Fea; Lee, Gene-Hsiang; Peng, Shie-Ming; Liu, Rai-Shung
CS Department of Chemistry, National Tsing-Hua University, Taiwan, 30043, Taiwan
SO Organometallics (1994), 13(12), 4973-7
CODEN: ORGND7; ISSN: 0276-7333
DT Journal
LA English
CC 23-7 (Aliphatic Compounds)
OS CASREACT 122:30928
GI



AB The enolate anion of [CpMo(CO)2(η3-2-CH3COC3H4)], readily generated by lithium diisopropylamide in cold THF (-78 °C), underwent alkylation with aldehydes to give the aldol products I (R = Ph, 2-furyl, CMe3) in good yields. X-ray diffraction measurement of I (R = Ph) shows strong intramol. hydrogen bonding within the ketone and alc. groups. The Me4NBH4 reduction of I via proton-chelation control in benzene/CH3OH proceeded with fair diastereoselectivities in favor of the syn-1,3-diol. Addition of PhSNa to the NO+ cation of the π-allyl syn-1,3-diols gave pentenediols II.

ST methylbutenone complex alkylation aldehyde; methylpentenediol complex; phenylthiomethylpentenediol; pentenediol phenylthiomethyl

IT Alkylation
(preparation of pentenediols from methylbutenone molybdenum complex)

IT 159565-39-6P
RL: BYP (Byproduct); PREP (Preparation)
(preparation of pentenediols from methylbutenone molybdenum complex)

IT 98-01-1, Furfural, reactions 100-52-7, Benzaldehyde, reactions 630-19-3, Pivalaldehyde 4984-82-1, Cyclopentadienylsodium 150324-04-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of pentenediols from methylbutenone molybdenum complex)

IT 159558-11-9P 159558-12-0P 159558-13-1P 159565-31-8P 159565-32-9P 159565-33-0P 159565-34-1P 159565-35-2P 159565-36-3P 159565-37-4P 159565-38-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pentenediols from methylbutenone molybdenum complex)

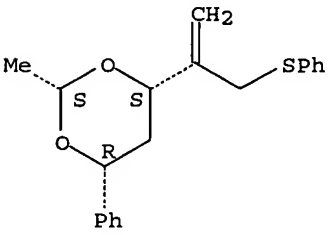
IT **159558-14-2P 159558-15-3P** 159558-16-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of pentenediols from methylbutenone molybdenum complex)

IT **159558-14-2P 159558-15-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of pentenediols from methylbutenone molybdenum complex)

RN 159558-14-2 HCAPLUS

CN 1,3-Dioxane, 2-methyl-4-phenyl-6-[1-[(phenylthio)methyl]ethenyl]-, (2α,4α,6α)- (9CI) (CA INDEX NAME)

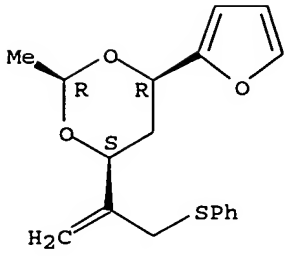
Relative stereochemistry.



RN 159558-15-3 HCAPLUS

CN 1,3-Dioxane, 4-(2-furanyl)-2-methyl-6-[1-[(phenylthio)methyl]ethenyl]-, (2α,4α,6α)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

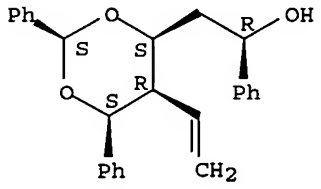


L46 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:207415 HCAPLUS
DN 114:207415
ED Entered STN: 31 May 1991
TI Regio- and stereocontrolled functionalization of acyclic molybdenum-η3-allyl complexes
AU Vong, Wen Jung; Peng, Shie Ming; Lin, Shie Hsiung; Lin, Wen Jye; Liu, Rai Shung
CS Dep. Chem., Natl. Tsing Hua Univ., Hsinchu, 30043, Taiwan
SO Journal of the American Chemical Society (1991), 113(2), 573-82
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
CC 29-11 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 23, 75
OS CASREACT 114:207415
AB Chemical transformation of the ester CpMo(CO)2(syn-η3-1-C3H4COOMe) to its η3-allyl alc., acid, acid chloride, and amide has been achieved. Treatment of CpMo(CO)2((syn-η3-1-C3H4CHROH) [R = H, CH3 (I)] with (CF3SO2)2O in ether at -78° stereoselectively generates the air-stable s-trans-η4-diene cations, which have been characterized by appropriate phys. methods. The ionization process proceeds via an intramol. SN2 mode. The s-trans-η4-cis-pentadiene cation reacts with water, alc., thiol, and amine to give η3-allyl derivs., which retain the same configuration as that of I. The enolate CpMo(CO)2(syn-η3-1-C3H4COCH2Li) condenses with aldehyde at -78° to yield the aldol products CpMo(CO)2(syn-η3-1-C3H4COCH2CHROH) [R = Ph, CH3 (II), (CH3)2CH] with good diastereoselectivity. The major diastereomer of II has been isolated and characterized by x-ray diffraction. Further reduction of this diastereomer with NaBH4 produces the corresponding 1,3-diol as a single diastereomer. Utilization of I and CpMo(CO)2[syn-η3-1-C3H4CH(OH)CHPhOH] in synthesis of acyclic 1,3-diol and 1,3,5-triol has been achieved, with excellent stereoselectivity; a mechanism has been proposed.
ST molybdenum allyl regioselective stereoselective reaction; diol stereoselective prepn; triol stereoselective prepn; crystal mol structure cyclopentadienylmolybdenum allyl
IT Alcohols, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(dihydric and trihydric, stereoselective preparation of, from molybdenum allyl complexes)
IT Regiochemistry
Stereochemistry
(of reactions of molybdenum allyl complexes)
IT 100-52-7, Benzaldehyde, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(decomplexation by, of molybdenum allyl complex)
IT 131297-49-9P 131349-97-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and amidation of)
IT 131349-74-1P 131349-75-2P 131349-93-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and conversion of, to acid)
IT 131297-48-8P 131349-96-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and conversion of, to acid chloride)
IT 131297-52-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and conversion of, to iminium salt)
IT 131297-56-8P 131432-32-1P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)
IT 131297-44-4P 131297-45-5P 131297-46-6P 131297-47-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and decarbonylation of)
IT 131432-33-2P 131432-34-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and decomplexation of, with benzaldehyde)
IT 131139-27-0P 131349-73-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)
IT 131297-55-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with lithium chloride)
IT 128923-52-4P 129029-46-5P 131349-77-4P 131349-98-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with triflic anhydride)
IT 129029-47-6P 131175-74-1P 131297-50-2P 131297-51-3P 131349-76-3P
131349-95-6P 131349-99-0P 131350-00-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactions of)
IT 131101-67-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactions of, with methanol or water)
IT 129029-45-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactions of, with nucleophiles)
IT 128923-59-1P 131297-53-5P 131349-86-5P 131349-88-7P 131349-89-8P
131349-90-1P 131349-91-2P 131349-92-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)
IT 128923-57-9P 131139-28-1P 131139-32-7P 131175-75-2P 131349-78-5P
131349-79-6P 131349-80-9P 131349-81-0P 131349-82-1P 131349-83-2P
131349-84-3P 131349-85-4P 131349-94-5P 131350-01-1P 131350-02-2P
131350-03-3P 131350-05-5P 131350-06-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 128923-51-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, crystal structure, and reactions of)
IT 131349-87-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, crystal structure, and reduction of)
IT 12107-35-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with Me chlorobutenoate or with chloropentenone)
IT 15320-72-6 61170-81-8
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with cyclopentadienylmolybdenum anion)
IT 131349-73-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)
RN 131349-73-0 HCAPLUS
CN 1,3-Dioxane-4-ethanol, 5-ethenyl-α,2,6-triphenyl-, [2α,4α(S*),5α,6α]- (9CI) (CA INDEX NAME)

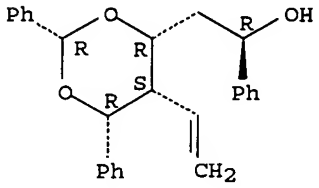
Relative stereochemistry.



L46 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:185675 HCAPLUS
DN 114:185675
ED Entered STN: 17 May 1991
TI Generation and aldol reaction of enolate anion adjacent to a η3-allyl-Mo(CO)2Cp moiety. A new approach to the stereoselective synthesis of 1,3,5-triol and 2-vinyl-3-hydroxyl-tetrahydrofuran
AU Lin, Shie Hsiung; Vong, Wen Jung; Cheng, Chih Yi; Wang, Sue Lein; Liu, Rai Shung
CS Dep. Chem., Natl. Tsinghua Univ., Hsinchu, Taiwan
SO Tetrahedron Letters (1990), 31(52), 7645-8
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
CC 29-11 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 75
AB The enolate of CpMo(CO)2(syn-η3-1-C3H4COCH3) generated with lithium diisopropylamide in THF undergoes diastereoselective aldol reaction with benzaldehyde; the alc. thus formed has been utilized for stereoselective synthesis of 1.5-diphenyl-2-vinyl-pentane-1,3,5-triol and 2-vinyl-3-hydroxy-5-phenyl-tetrahydrofuran.
ST aldol reaction enolate allylmolybdenum benzaldehyde; triol vinylpentane; THF vinylhydroxyl; crystal structure allylmolybdenum hydroxymethyl ketone; mol structure allylmolybdenum hydroxymethyl ketone
IT Crystal structure
Molecular structure
(of (allylmolybdenum) hydroxymethyl ketone)
IT Aldol condensation
(of allyl molybdenum enolate anion with benzaldehyde)
IT 133090-82-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and chlorination of)
IT 131175-72-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and deprotonation of, with lithium diisopropylamide)
IT 131349-87-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of, with sodium borohydride)
IT 129029-43-2P 131045-30-2P 131045-31-3P 131139-31-6P
131139-32-7P 133068-00-5P 133345-41-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 131349-90-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, crystal and mol. structure and reduction of, with sodium borohydride)
IT 12107-35-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chloropentenone)
IT 61170-81-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with cyclopentadienolmangaonate complex)
IT 131139-31-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 131139-31-6 HCAPLUS
CN 1,3-Dioxane-4-ethanol, 5-ethenyl-α,2,6-triphenyl-, [2α,4α(R*),5α,6α]- (9CI) (CA INDEX NAME)

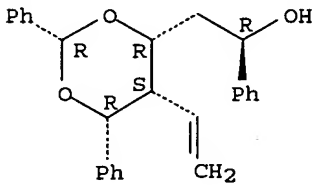
Relative stereochemistry.



L46 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:24103 HCAPLUS
DN 114:24103
ED Entered STN: 26 Jan 1991
TI Stereocontrolled functionalization of acyclic molybdenum-η3-allyl complexes: a new approach to the stereoselective synthesis of 1,3-diols
AU Uong, Wen Jung; Lin, Shie Hsiung; Liu, Rai Shung; Lee, Gene Hsian; Peng, Shie Ming
CS Dep. Chem., Natl. Tsing Hua Univ., Hsinchu, 30043, Taiwan
SO Journal of the Chemical Society, Chemical Communications (1990), (18), 1285-7
CODEN: JCCCAT; ISSN: 0022-4936
DT Journal
LA English
CC 29-11 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 23, 75
OS CASREACT 114:24103
AB Functionalization of [CpMo(CO)2(η3-syn-1-C3H4COCH3)] (Cp = η5-C5H5) proceeds in a highly stereospecific manner; the Mo-η3-allyl unit is effective in directing asym. carbon induction in the course of s-trans-η4-cis-pentadiene formation, aldol condensation and asym. 1,3-diol synthesis.
ST asym synthesis diol; aldol condensation stereoselective functionalized allylmolybdenum; pentadiene molybdenum asym induction; stereochem reaction functionalized allylmolybdenum; crystal structure functionalized allylmolybdenum; mol structure functionalized allylmolybdenum
IT Asymmetric synthesis and induction
(of 1,3-diols from acyclic molybdenum allyl complexes)
IT Crystal structure
Molecular structure
(of functionalized allylmolybdenum complexes)
IT Stereochemistry
(of reactions of functionalized acyclic molybdenum allyl complexes)
IT Aldol condensation
(stereoselective, of functionalized allylmolybdenum complexes)
IT 131101-67-2P 131103-55-4P
RL: FORM (Formation, nonpreparative); PREP (Preparation)

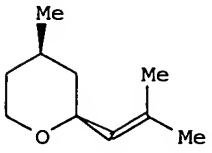
(formation of, from isomerization of diene complex)
IT 131045-31-3P 131082-91-2P 131082-92-3P 131082-93-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with benzaldehyde in presence of methanol, stereochem. of)
IT 128923-53-5P 131045-30-2P 131082-90-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with nitrosyl tetrafluoroborate and lithium chloride)
IT 128923-52-4P 131082-89-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with triflic anhydride)
IT **131139-31-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and stereoselective acid hydrolysis of)
IT 131139-27-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and stereoselective hydrolysis of)
IT 129029-45-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and stereoselective reactions of)
IT 128923-64-8P 131139-28-1P 131139-29-2P 131139-30-5P 131139-32-7P 131175-74-1P 131175-75-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 128923-60-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, crystal structure, and stereoselective reduction of)
IT 131175-72-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(stereoselective reduction and crystal structure of)
IT 131082-88-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(stereoselective reduction of)
IT **131139-31-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and stereoselective acid hydrolysis of)
RN 131139-31-6 HCAPLUS
CN 1,3-Dioxane-4-ethanol, 5-ethenyl-α,2,6-triphenyl-, [2α,4α(R*),5α,6α]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

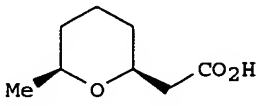


L46 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:6220 HCAPLUS
DN 114:6220
ED Entered STN: 12 Jan 1991
TI Stereoselective syntheses of α-substituted cyclic ethers and syn-1,3-diols

AU Homma, Koichi; Takenoshita, Haruhiro; Mukaiyama, Teruaki
CS Org. Chem. Res. Lab., Tanabe Seiyaku Co., Ltd., Toda, 335, Japan
SO Bulletin of the Chemical Society of Japan (1990), 63(7), 1898-15
CODEN: BCSJA8; ISSN: 0009-2673
DT Journal
LA English
CC 27-13 (Heterocyclic Compounds (One Hetero Atom))
OS CASREACT 114:6220
GI



I



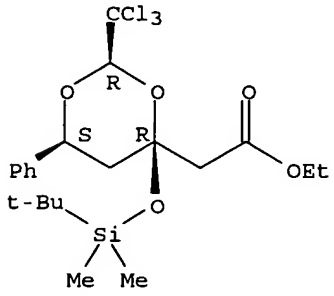
II

AB In the presence of a catalytic amount of triphenylmethylium hexachloroantimonate or a catalyst system of antimony pentachloride, chlorotrimethylsilane and tin(II) iodide, α-substituted cyclic ethers are stereoselectively prepared from lactones by successive treatment with 1-(tert-butyldimethylsiloxy)-1-ethoxyethene and silyl nucleophiles such as triethylsilane, allyltrimethylsilane and trimethylsilyl cyanide. These catalysts also promote the reaction of γ-, δ- and ε-trimethylsiloxy carbonyl compds. with silyl nucleophiles resulting in the formation of α-substituted cyclic ethers. The former procedure is effectively applied to short synthesis of (-)-cis-rose oxide (I), and (cis-6-methyltetrahydro-2-pyranyl)acetic acid (II), a constituent of civet. Furthermore, syn-1,3-diols are also stereoslectively prepared from lactone analog, 6-cis-substituted 2-(trichloromethyl)-1,3-dioxan-4-ones, easily prepared from β-hydroxycarboxylic acids.
ST ether cyclic alpha substituted; diol syn; lactone reaction silyloxyethoxyethene silyl nucleophile; carbonyl silyloxy reaction silyl nucleophile; rose oxide cis; methyltetrahydropyranylacetic acid
IT Lactones
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (silyloxy)ethoxyethene, in presence of triphenylmethylium hexachloroantimonate)
IT Carbonyl compounds, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(silyloxy, reaction of, with silyl nucleophiles, in presence of triphenylmethylium hexachloroantimonate)
IT Ethers, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(cyclic, preparation of, from lactones and (silyloxy)ethoxyethenes)
IT 10294-70-9, Stannous iodide
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalysts containing antimony pentachloride, chlorotrimethylsilane and, for reaction of lactones with (silyloxy)ethoxyethene)
IT 75-77-4, Chlorotrimethylsilane, uses and miscellaneous
RL: USES (Uses)
(catalysts containing antimony pentachloride, tin iodide and, for reaction of lactones with (silyloxy)ethoxyethene)
IT 7646-78-8, Stannic chloride, uses and miscellaneous 7647-18-9, Antimony pentachloride
RL: USES (Uses)
(catalysts containing chlorotrimethylsilane, tin iodide and, for reaction of lactones with (silyloxy)ethoxyethene)
IT 437-18-3, Triphenylmethyl hexafluoroantimonate 1586-91-0, Triphenylmethyl hexachloroantimonate 3058-33-1
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for reaction of lactones with (silyloxy)ethoxyethene)

IT 300-85-6 3480-87-3 23985-59-3 130822-12-7 130822-13-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with chloral)
IT 75-87-6, Chloral
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with hydroxypropionic acids)
IT 79936-64-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and Grignard reaction of, with methylmagnesium bromide)
IT 130822-03-6P 130822-27-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)
IT 130822-24-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclization of)
IT 79981-82-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and dehydration of)
IT 124468-82-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)
IT 127801-68-7P 127801-69-8P 127801-70-1P 127801-71-2P 127822-99-5P
127910-15-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with (silyloxy)ethoxyethene)
IT 130822-02-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with naphthyl isocyanate)
IT 127801-72-3P **127801-73-4P** 127801-74-5P 127801-75-6P
127801-76-7P 127910-16-1P **127910-17-2P** 128316-90-5P
128316-91-6P 128316-92-7P 128316-93-8P 128316-94-9P
130822-00-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)
IT 130822-19-4P **130822-20-7P** 130822-21-8P 130822-22-9P
130822-23-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and ring cleavage of)
IT 2434-02-8P 3033-23-6P, (-)-cis-Rose oxide 4203-44-5P 16133-83-8P
38786-78-6P 76985-22-3P 87172-73-4P 107400-64-6P 119873-45-9P
119873-46-0P 119873-47-1P 119873-48-2P 119873-49-3P 119873-50-6P
121029-82-1P 124468-71-9P 124468-72-0P 124468-74-2P 124468-75-3P
124468-76-4P 124468-77-5P 124468-78-6P 124468-81-1P 124468-83-3P
124469-04-1P 124469-05-2P 124469-06-3P 124469-07-4P 124469-09-6P
124578-87-6P 127910-18-3P 130821-85-1P 130822-01-4P 130822-04-7P
130822-26-3P 130822-28-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 61898-55-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (silyloxy)ethoxyethene)
IT 96-48-0, γ-Butyrolactone 108-29-2 502-44-3, 2-Oxepanone
542-28-9, δ-Valerolactone 823-22-3 1121-84-2 1679-47-6
2549-59-9 2549-61-3 3123-98-6 10603-03-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (silyloxy)ethoxyethene and silyl nucleophile)
IT 42201-84-3
RL: RCT (Reactant); RACT (Reactant or reagent)

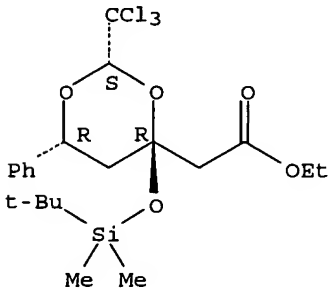
(reaction of, with lactones, catalysts for)
IT 124468-98-0 124468-99-1 124469-00-7 124469-01-8 124469-02-9
124469-03-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with silyl nucleophile)
IT **127801-73-4P 127910-17-2P 128316-91-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)
RN 127801-73-4 HCAPLUS
CN 1,3-Dioxane-4-acetic acid, 4-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6-phenyl-2-(trichloromethyl)-, ethyl ester, (2α,4α,6α)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



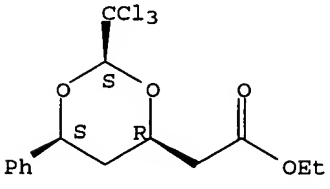
RN 127910-17-2 HCAPLUS
CN 1,3-Dioxane-4-acetic acid, 4-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6-phenyl-2-(trichloromethyl)-, ethyl ester, (2α,4β,6α)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 128316-91-6 HCAPLUS
CN 1,3-Dioxane-4-acetic acid, 6-phenyl-2-(trichloromethyl)-, ethyl ester, (2α,4α,6α)- (9CI) (CA INDEX NAME)

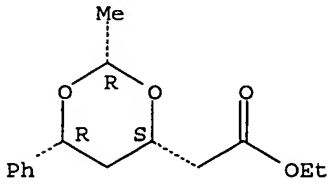
Relative stereochemistry.



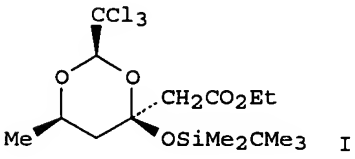
IT **130822-20-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)
(preparation and ring cleavage of)
RN 130822-20-7 HCAPLUS
CN 1,3-Dioxane-4-acetic acid, 2-methyl-6-phenyl-, ethyl ester, (2α,4α,6α)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L46 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1990:459054 HCAPLUS
DN 113:59054
ED Entered STN: 17 Aug 1990
TI Stereoselective reduction of tert-butyldimethylsiloxy group of ethyl 2-(trichloromethyl)-4-(tert-butyldimethylsiloxy)-1,3-dioxan-4-acetates
AU Homma, Koichi; Mukaiyama, Teruaki
CS Fac. Sci., Sci. Univ. Tokyo, Tokyo, 162, Japan
SO Heterocycles (1990), 31(3), 443-6
CODEN: HTCYAM; ISSN: 0385-5414
DT Journal
LA English
CC 28-11 (Heterocyclic Compounds (More Than One Hetero Atom))
OS CASREACT 113:59054
GI

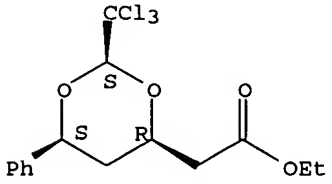


I

AB The tert-Butyldimethylsiloxy group of Et 4-tert-butyldimethylsiloxy-2-trichloromethyl-1,3-dioxan-4-acetates (I) was stereoselectively reduced with triethylsilane to Et cis-2-trichloromethyl-1,3-dioxan-4-acetates by using titanium tetrachloride as a promoter.
ST stereoselective redn butyldimethylsiloxytrichloromethyldioxanacetate titanium tetrachloride
IT Lewis acids
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for stereoselective reduction of tert-butyldimethylsiloxy group)
IT Reduction
(stereoselective, of tert-butyldimethylsiloxy group in Et (trichloromethyl)(tert-butyldimethylsiloxy)dioxanacetates with titanium tetrachloride)
IT Reduction catalysts
(stereoselective, titanium tetrachloride, for tert-butyldimethylsiloxy group in Et (trichloromethyl)(tert-butyldimethylsiloxy)dioxanacetates)
IT 7446-70-0, Aluminum trichloride, uses and miscellaneous 7550-45-0, Titanium chloride (TiCl4) (T-4)-, uses and miscellaneous 7646-78-8, Tin tetrachloride, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for stereoselective reduction of tert-butyldimethylsiloxy group of Et (trichloromethyl)(tert-butyldimethylsiloxy)dioxanacetates)

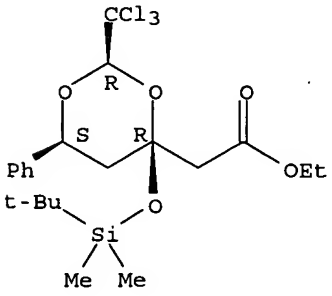
IT 128316-90-5P **128316-91-6P** 128316-92-7P 128316-93-8P
128316-94-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 127801-72-3 **127801-73-4** 127801-74-5 127801-75-6
127801-76-7 127910-16-1 **127910-17-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(stereoselective reduction of, with triethylsilane in presence of titanium tetrachloride)
IT **128316-91-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 128316-91-6 HCAPLUS
CN 1,3-Dioxane-4-acetic acid, 6-phenyl-2-(trichloromethyl)-, ethyl ester, (2α,4α,6α)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



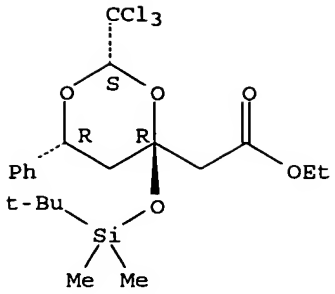
IT **127801-73-4 127910-17-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(stereoselective reduction of, with triethylsilane in presence of titanium tetrachloride)
RN 127801-73-4 HCAPLUS
CN 1,3-Dioxane-4-acetic acid, 4-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6-phenyl-2-(trichloromethyl)-, ethyl ester, (2α,4α,6α)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

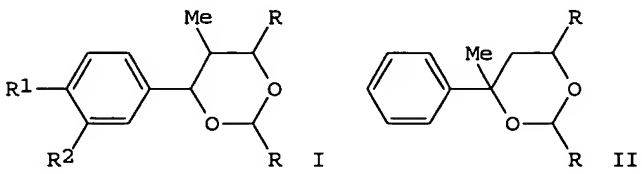


RN 127910-17-2 HCAPLUS
CN 1,3-Dioxane-4-acetic acid, 4-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6-phenyl-2-(trichloromethyl)-, ethyl ester, (2α,4β,6α)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

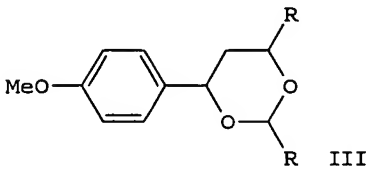


L46 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1986:591018 HCAPLUS
DN 105:191018
ED Entered STN: 28 Nov 1986
TI Condensation of aromatic alkenes with aldehydes catalyzed by ion-exchange resins. III. Aliphatic aldehydes
AU El Gharbi, R.; Delmas, M.; Gaset, A.
CS Lab. Synth. Phys.-Chim. Org., Ec. Natl. Ing. Sfax, Sfax, 3038, Tunisia
SO Tetrahedron (1986), 42(4), 1191-8
CODEN: TETRAB; ISSN: 0040-4020
DT Journal
LA French
CC 28-11 (Heterocyclic Compounds (More Than One Hetero Atom))
OS CASREACT 105:191018
GI



I

II

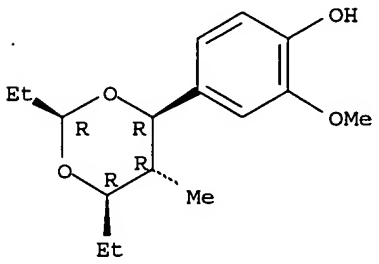


III

AB Condensation of 4,3-R1R2C6H3CH:CHMe (R1 = MeO, OH; R2 = H, MeO; R1R2 = OCH2O) or PhCMe:CH2 with aliphatic aldehydes RCHO (R = Et, Pr, Bu, n-C5H11) gave isomers of dioxanes I and II, resp. The reaction was catalyzed by ionic exchange resins. On the other hand, condensation of RCHO (same R) with 4-MeOC6H4CH:CH2 gave single isomers of the 1,3-dioxanes III.
ST condensation alkanal alkene phenyl; aldehyde aliph condensation phenyl alkene; dioxane; dioxacyclohexane
IT Condensation reaction catalysts
(ion exchange resins, for phenyl-substituted alkenes with aldehydes)
IT Cyclocondensation reaction catalysts
(ion exchange resins, for phenyl-substituted alkenes with aliphatic aldehydes)
IT Condensation reaction
Cyclocondensation reaction
(of phenyl-substituted alkenes with aliphatic aldehydes)
IT Alkenes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)

(phenyl-substituted, condensation with aliphatic aldehydes)
IT Aldehydes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(aliphatic, condensation with phenyl-substituted alkenes)
IT 97-54-1 98-83-9, reactions 104-46-1 120-58-1 637-69-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with aliphatic aldehydes)
IT 66-25-1 110-62-3 123-38-6, reactions 123-72-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with phenyl-substituted alkenes)
IT 78703-13-6P 78703-14-7P 78703-15-8P 78703-16-9P 78779-40-5P
78779-41-6P 104789-86-8P 104789-87-9P 104789-88-0P 104789-89-1P
104789-90-4P 104789-91-5P 104789-92-6P 104789-93-7P
104789-94-8P 104789-95-9P 104789-96-0P 104789-97-1P
104789-98-2P 104789-99-3P 104790-00-3P 104790-01-4P 104871-48-9P
104871-49-0P 104871-50-3P 104871-51-4P 104871-52-5P 104871-53-6P
104871-54-7P 104871-55-8P 104871-56-9P 104871-57-0P 104871-58-1P
104871-59-2P 104871-60-5P 104871-61-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT **104789-94-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 104789-94-8 HCAPLUS
CN Phenol, 4-(2,6-diethyl-5-methyl-1,3-dioxan-4-yl)-2-methoxy-, (2α,4α,5β,6α)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L46 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1967:115660 HCAPLUS
DN 66:115660
ED Entered STN: 12 May 1984
TI Condensation reactions of α,α-dimorpholinoacetic acid and glyoxylic acid on olefins
AU Kerfanto, Michel; Le Roy, Pierre; Vene, Jean
CS Ecole Natl. Super. Chim. Rennes, Rennes, Fr.
SO Comptes Rendus des Seances de l'Academie des Sciences, Serie C: Sciences Chimiques (1967), 264(2), 232-5
CODEN: CHDCAQ; ISSN: 0567-6541
DT Journal
LA French
CC 28 (Heterocyclic Compounds (More Than One Hetero Atom))
OS CASREACT 66:115660
GI For diagram(s), see printed CA Issue.
AB α,α-Dimorpholinoacetic acid (I), prepared from α,α-dichloroacetic acid and morpholine, reacts with an olefin in concentrated H2SO4 to give II. A solid mixture of the morpholinium salt of I and morpholinium chloride is dispersed in an HOAc-H2SO4 mixture, the olefin is added, and the mixture heated with rapid agitation for 10-40 hrs. at 50-60°. The following II are obtained (R1, R2, R3, % yield, and m.p. given): H, 4-MeOC6H4, H, 68, 150°; H, 4-MeC6H4, H, 40, 113°; H, 3-MeC6H4, H, 42, 96°; H, Ph, H, 43-5, 77°;

H, 4-BrC6H4, H, 30, 126°; H, 4-ClC6H4, H, 30, 127°; H, 3-O2NC6H4, H, 10-15, 128°; Me, Ph, H, 73, - (b0.4 180°); H, 3,4-(MeO)(HO)C6H3, Me, 60, 183°; H, 4-MeOC6H4, Me, 70, 169°. In the presence of H2O, results are obtained similar to those in the reaction of HO2CCHO (III) on olefins. The presence of HOAc and H2O leads to the formation of variable proportions of α-acetoxybutyrolactone (IV, R = OAc). The condensation of olefins with com. 40% or 80% III gives principally IV (R = OH). When R1 = R3 = H, the γ-oxo acid, R2CO(CH2)2CO2H (V), isomeric with the hydroxylactone, is also formed. With p-Cl- and p-BrC6H4CH:CH2, a 2,4-dicarboxy-1,3-dioxane, (VI) was isolated and identified by ir and N.M.R. spectra. The following IV (R = OH) are prepared (R1, R2, R3, % yield with 40% III, % yield with 80% III, and m.p. given): H, Ph. H, 60, 62, 125°; H, 4-MeC6H4, H, 35, 45, 81°; H, 3-MeC6H4, H, 36, 45, 66°; H, 4-ClC6H4, H, 20, 55, 125°; H, 4-BrC6H4, H, -, 60, 132°; H, 3-O2NC6H4, H, -, 20, 112°; Me, Ph, H, 65, 62, 97°; H, 3,4-(MeO)(HO)C6H3, Me, 60, 70, 155°; H, 4-MeOC6H4, Me, 50, 48, 110°. IV (R = OAc) and V prepared are (R1, R2, R3, m.p. or b.p. of IV, and m.p. of V given): H, Ph, H, m. 89°, 116°; H, 4-MeC6H4, H, b0.4 162°, 127°; H, 3-MeC6H4, H, b0.4 170°, 115°; H, 4-ClC6H4, H, m. 94°, 133°; H, 4-BrC6H4, H, m. 98°, 148°; H, 3-O2NC6H4, H, m. 89°, 165°; Me, Ph, H, b0.3 152°, -; H, 3,4-(MeO)(AcO)C6H3, Me, m. 145°, -; H, 4-MeOC6H4, Me, m. 69°, -. Also prepared are VI (R = 4-ClC6H4), m. 213°, then 238° (di-Me ester m. 56°); and VI (R = 4-BrC6H4), m. 218°, then 239°; di-Me ester m. 88°.

IT Olefins, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(with dimorpholinoacetic acid and glyoxylic acid)

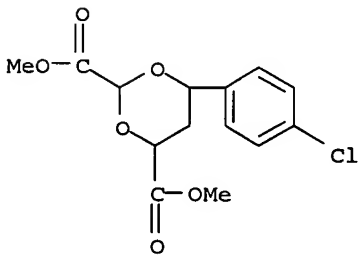
IT Acetic acid, dimorpholino-
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with olefins)

IT 13397-35-8P 13983-50-1P 13983-51-2P 13983-52-3P 13983-53-4P
13983-54-5P 13983-55-6P 13983-56-7P 13983-57-8P 13983-58-9P
13983-59-0P 13983-60-3P 13983-61-4P 13983-62-5P 13983-63-6P
13983-64-7P 13983-65-8P 13983-67-0P 13983-68-1P 13983-69-2P
13983-70-5P 13983-71-6P 13983-72-7P 13983-73-8P 13983-74-9P
13983-75-0P 13983-76-1P 13983-77-2P 13983-78-3P **13984-80-0P**
13984-81-1P 14060-45-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 298-12-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with olefins)

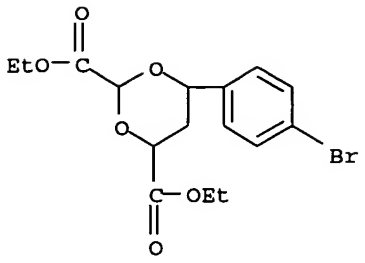
IT **13984-80-0P 13984-81-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 13984-80-0 HCAPLUS
CN m-Dioxane-2,4-dicarboxylic acid, 6-(p-chlorophenyl)-, dimethyl ester (8CI) (CA INDEX NAME)



RN 13984-81-1 HCAPLUS
CN m-Dioxane-2,4-dicarboxylic acid, 6-(p-bromophenyl)-, diethyl ester (8CI)

(CA INDEX NAME)



=> b uspatall
FILE 'USPATFULL' ENTERED AT 12:01:04 ON 16 NOV 2005
CA INDEXING COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

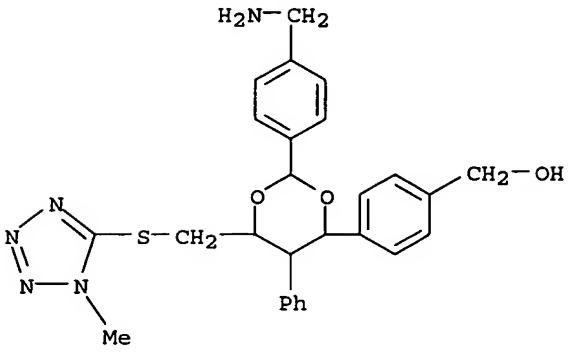
FILE 'USPAT2' ENTERED AT 12:01:04 ON 16 NOV 2005
CA INDEXING COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

=> d bib abs fhitstr hitrn l47 tot

L47 ANSWER 1 OF 4 USPATFULL on STN
AN 2005:144167 USPATFULL
TI Human papillomavirus inhibitors
IN Meneses, Patricio I., Philadelphia, PA, UNITED STATES
Koehler, Angela N., Cambridge, MA, UNITED STATES
Wong, Jason C., Oberlin, OH, UNITED STATES
Howley, Peter M., Wellesley, MA, UNITED STATES
Schreiber, Stuart L., Boston, MA, UNITED STATES
PA President and Fellows of Harvard College (U.S. corporation)
PI US 2005123902 A1 20050609
AI US 2004-851407 A1 20040521 (10)
PRAI US 2003-472261P 20030521 (60)
DT Utility
FS APPLICATION
LREP CHOATE, HALL & STEWART LLP, EXCHANGE PLACE, 53 STATE STREET, BOSTON, MA, 02109, US
CLMN Number of Claims: 65
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 1845
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides systems for identifying anti-viral agents. In particular, the invention encompasses reagents and strategies for identifying agents that inhibit or disrupt key protein-protein interactions that are important in the life cycle of papillomaviruses. The invention allows identification, production, and/or use of agents that reduce or inhibit the replication of HPV by inhibiting (e.g., precluding, reversing, or disrupting) the formation of the E1-E2 protein-protein complex. The invention also provides specific inhibitory agents, pharmaceutical compositions, and methods of using these inhibitors and pharmaceutical compositions for inhibiting viral replication in vitro. Methods are also described for the treatment and prevention of HPV infections and HPV-related diseases in patients.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **852992-28-0**
(as antiviral agent inhibiting papillomavirus replication; human papillomavirus inhibitors and screening system reagents)
RN 852992-28-0 USPATFULL
CN Benzenemethanol, 4-[2-[4-(aminomethyl)phenyl]-6-[[(1-methyl-1H-tetrazol-5-

yl)thio]methyl]-5-phenyl-1,3-dioxan-4-yl]- (9CI) (CA INDEX NAME)



IT **852992-28-0**
(as antiviral agent inhibiting papillomavirus replication; human papillomavirus inhibitors and screening system reagents)
IT **852992-29-1P 852992-30-4P**
(as antiviral agent inhibiting papillomavirus replication; human papillomavirus inhibitors and screening system reagents)
IT **852992-29-1DP**, resin-bound
(human papillomavirus inhibitors and screening system reagents)

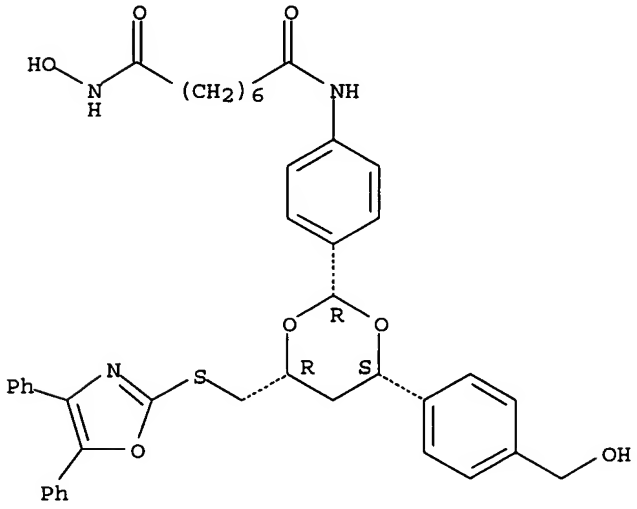
L47 ANSWER 2 OF 4 USPATFULL on STN
AN 2004:95394 USPATFULL
TI Dioxanes and uses thereof
IN Schreiber, Stuart L., Boston, MA, UNITED STATES
Sternson, Scott M., New York, NY, UNITED STATES
Wong, Jason C., Cambridge, MA, UNITED STATES
Grozinger, Christina M., Urbana, IL, UNITED STATES
Haggarty, Stephen J., Somerville, MA, UNITED STATES
Koeller, Kathryn M., Seattle, WA, UNITED STATES
PI US 2004072849 A1 20040415
AI US 2003-621276 A1 20030717 (10)
RLI Continuation-in-part of Ser. No. US 2002-144316, filed on 9 May 2002, PENDING
PRAI US 2001-289850P 20010509 (60)
DT Utility
FS APPLICATION
LREP PATENT DEPARTMENT, CHOATE, HALL & STEWART, Exchange Place, 53 State Street, Boston, MA, 02109
CLMN Number of Claims: 65
ECL Exemplary Claim: 1
DRWN 78 Drawing Page(s)
LN.CNT 7435
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB In recognition of the need to develop novel therapeutic agents and efficient methods for the synthesis thereof, the present invention provides novel compounds of general formula (I): ##STR1##

and pharmaceutically acceptable derivatives thereof, wherein R.sup.1, R.sup.2, R.sup.3, n, X and Y are as defined herein. The present invention also provides pharmaceutical compositions comprising a compound of formula (I) and a pharmaceutically acceptable carrier. The present invention further provides compounds capable of inhibiting histone deacetylatase activity and methods for treating disorders regulated by histone deacetylase activity (e.g., cancer and protozoal infections) comprising administering a therapeutically effective amount of a compound of formula (I) to a subject in need thereof. The present invention additionally provides methods for modulating the glucose-sensitive subset of genes downstream of Ure2p. The present

invention also provides methods for preparing compounds of the invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT 537049-40-4P, Tubacin
(claimed compound; preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
RN 537049-40-4 USPATFULL
CN Octanediamide, N-[4-[(2R,4R,6S)-4-[[(4,5-diphenyl-2-oxazolyl)thio]methyl]-6-[4-(hydroxymethyl)phenyl]-1,3-dioxan-2-yl]phenyl]-N'-hydroxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



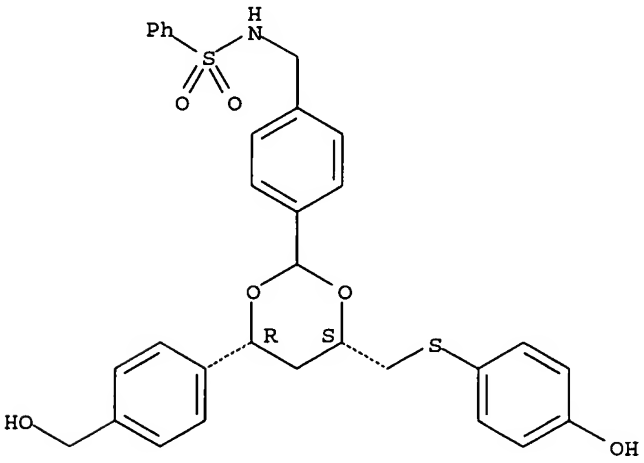
IT 537049-40-4P, Tubacin
(claimed compound; preparation of trisubstituted dioxanes as histone deacetylase inhibitors)
IT 332925-20-9P 394657-68-2P 394657-69-3P
475161-04-7P
(preparation of trisubstituted dioxanes as histone deacetylase inhibitors)

L47 ANSWER 3 OF 4 USPATFULL on STN
AN 2003:266010 USPATFULL
TI Dioxanes and uses thereof
IN Schreiber, Stuart L., Boston, MA, UNITED STATES
Sternson, Scott M., New York, NY, UNITED STATES
Wong, Jason C., Cambridge, MA, UNITED STATES
Grozinger, Christina M., Champagne, IL, UNITED STATES
PI US 2003187027 A1 20031002
AI US 2002-144316 A1 20020509 (10)
PRAI US 2001-289850P 20010509 (60)
DT Utility
FS APPLICATION
LREP Choate, Hall & Stewart, Exchange Place, 53 State Street, Boston, MA, 02109
CLMN Number of Claims: 38
ECL Exemplary Claim: 1
DRWN 26 Drawing Page(s)
LN.CNT 3455
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB In recognition of the need to develop novel therapeutic agents and efficient methods for the synthesis thereof, the present invention provides novel compounds of general formula (I): ##STR1##

and pharmaceutically acceptable derivatives thereof, wherein R.sup.1, R.sup.2, R.sup.3, n, X and Y are as defined herein. The present invention also provides pharmaceutical compositions comprising a compound of formula (I) and a pharmaceutically acceptable carrier. The present invention further provides compounds capable of inhibiting histone deacetylatase activity and methods for treating disorders regulated by histone deacetylase activity (e.g., cancer and protozoal infections) comprising administering a therapeutically effective amount of a compound of formula (1) to a subject in need thereof. The present invention additionally provides methods for modulating the glucose-sensitive subset of genes downstream of Ure2p.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **332925-20-9P**
(preparation of dioxanes as inhibitors of histone deacetylase)
RN 332925-20-9 USPATFULL
CN Benzenesulfonamide, N-[[4-[(4R,6S)-4-[4-(hydroxymethyl)phenyl]-6-[[(4-hydroxyphenyl)thio]methyl]-1,3-dioxan-2-yl]phenyl]methyl]-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



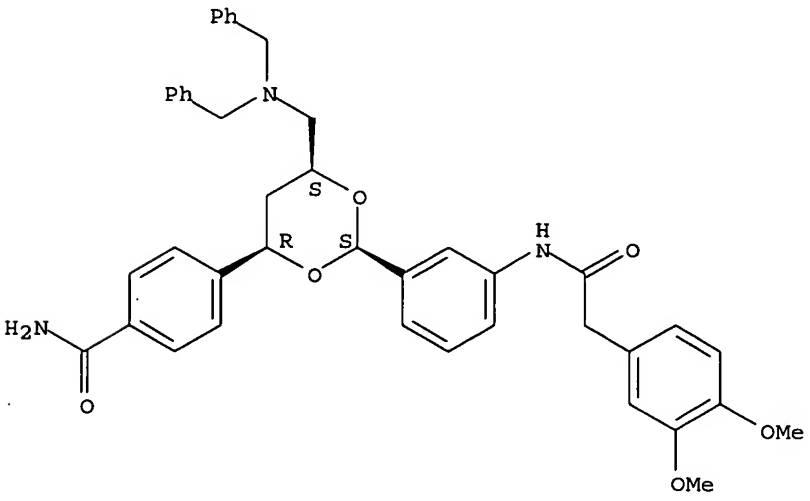
IT **332925-20-9P 394657-68-2P 475161-03-6P 475161-04-7P 475161-06-9P**
(preparation of dioxanes as inhibitors of histone deacetylase)

L47 ANSWER 4 OF 4 USPATFULL on STN
AN 2003:120349 USPATFULL
TI Synthesis of combinatorial libraries of compounds reminiscent of natural products
IN Schreiber, Stuart L., Boston, MA, UNITED STATES
Shair, Matthew D., Somerville, MA, UNITED STATES
Tan, Derek S., Rochester, NY, UNITED STATES
Foley, Michael A., Somerville, MA, UNITED STATES
Stockwell, Brent R., Boston, MA, UNITED STATES
PI US 2003082830 A1 20030501
AI US 2002-185364 A1 20020627 (10)
RLI Continuation of Ser. No. US 1998-121922, filed on 25 Jul 1998, GRANTED, Pat. No. US 6448443 Continuation-in-part of Ser. No. US 1997-951930, filed on 16 Oct 1997, PENDING
PRAI US 1996-29128P 19961016 (60)
US 1997-49864P 19970606 (60)
DT Utility
FS APPLICATION
LREP Choate, Hall & Stewart, Exchange Place, 53 State Street, Boston, MA, 02109

CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN 50 Drawing Page(s)
LN.CNT 1716
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides complex compounds reminiscent of natural products and libraries thereof, as well as methods for their production. The inventive compounds and libraries of compounds are reminiscent of natural products in that they contain one or more stereocenters, and a high density and diversity of functionality. In general, the inventive libraries are synthesized from diversifiable scaffold structures, which are synthesized from readily available or easily synthesizable template structures. In certain embodiments, the inventive compounds and libraries are generated from diversifiable scaffolds synthesized from a shikimic acid based epoxyol template. In other embodiments, the inventive compounds and libraries are generated from diversifiable scaffolds synthesized from the pyridine-based template isonicotinamide. The present invention also provides a novel ortho-nitrobenzyl photolinker and a method for its synthesis. Furthermore, the present invention provides methods and kits for determining one or more biological activities of members of the inventive libraries. Additionally, the present invention provides pharmaceutical compositions containing one or more library members.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **206537-12-4P**
(droplet assay system for simultaneously assaying combinatorial libraries and identifying compds. of chemical or biol. activities)
RN 206537-12-4 USPATFULL
CN Benzeneacetamide, N-[3-[(2S,4R,6S)-4-[4-(aminocarbonyl)phenyl]-6-[[bis(phenylmethyl)amino]methyl]-1,3-dioxan-2-yl]phenyl]-3,4-dimethoxy-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **206537-12-4P**
(droplet assay system for simultaneously assaying combinatorial libraries and identifying compds. of chemical or biol. activities)

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(FILE 'HOME' ENTERED AT 11:17:47 ON 16 NOV 2005)

FILE 'HCAPLUS' ENTERED AT 11:18:17 ON 16 NOV 2005

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L2          119 E3,E5
                E SCHREIBER STUART/AU
L3          423 E3-6
                E STERNSON S/AU
L4           10 E4-5
                E GROZINGER C/AU
L5           16 E3-6
                E HOGGARTY S/AU
                E KOELLER K/AU
L6           24 E5,E7-8
L7        84766 HARVARD/CS,PA
                E HOWARD HUGHES/CS,PA
                E HOWARD (1W)(HUGHES OF HUGES OR HUGHEES)/CS,PA
L8        16075 (HOWARD (1W)(HUGHES OR HUGES OR HUGHEES))/CS,PA

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L9              TRA L1 1- RN :        66 TERMS

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L11           20 10 AND OCOC3/ES AND 46.150.18/RID AND NCOC2/ES
L12            1 L11 AND 6/NR
L13           14 C37H41N3O7S
L14            0 L13 AND L11
L15            0 L13 AND OCOC3/ES
L16              STR
L17            3 L16
L18          567 L16 FULL
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L19              STR L16
L20            4 L19 SAM SUB=L18
L21           82 L19 FULL SUB=L18
                SAV TEM WARD276S0/A L21
L22           10 L21 AND NCOC2/ES
L23            1 C41H43N3O7S AND L22
L24            6 C41H43N3O7S
L25            5 L24 NOT L23
L26              STR L16
L27            9 L26 SAM SUB=L18
                SAV TEM L27 WARD276S1/A
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L29            7 L28 AND L10
L30           79 L28 NOT CCS/CI
                E A/CI
L31            9 L28 NOT L30

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L35           48 L33 NOT L34
L36            8 L23
L37            6 L36 AND L1-8
L38           13 L34,L37
L39            2 L36 NOT L37
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L45          11 E50-60 AND L44

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L46          10 L45 AND L42

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L47           4 L30

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